

Service Manual

Dolby NR-Equipped
Stereo Double Cassette Deck

Cassette Deck
RS-X501

*  **DOLBY B-C NR HX PRO**



* HX Pro headroom extension originated by Bang Olufsen and manufactured under license from Dolby Laboratories Licensing Corporation. "DOLBY", the double-D symbol, and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

Color

(K)...Black Type

Area

Country Code	Area	Color
(E)	Continental Europe.	(K)
(EB)	Great Britain.	(K)
(EG)	F.R. Germany and Italy.	(K)
(GC)	Asia, Latin America, Middle Near East and Africa.	(K)
(GN)	Oceania.	(K)

RS-X911 MECHANISM SERIES (AR300)

SPECIFICATIONS

■ CASSETTE DECK SECTION

Deck system	Stereo cassette deck
Track system	4-track, 2-channel
Heads	
(tape deck 1) Play	Permalloy head
(tape deck 2) Rec/play	Permalloy head
Erasing	Double-gap ferrite head
Motors	
(tape deck 1) Capstan	DC servo motor
(tape deck 2) Capstan	DC servo motor
Recording system	AC bias
Bias frequency	80 kHz
Erasing system	AC erase
Tape speeds	4.8 cm/sec. (1 $\frac{7}{8}$ ips)
Frequency response	
NORMAL	30 Hz~16 kHz
	40 Hz~15 kHz (DIN)
CrO ₂	30 Hz~17 kHz
	40 Hz~16 kHz (DIN)
METAL	30 Hz~18 kHz
	40 Hz~17 kHz (DIN)
S/N (signal level=max recording level, CrO ₂ type tape)	
Dolby C NR on	74 dB (CCIR)
Dolby B NR on	66 dB (CCIR)
Dolby NR off	56 dB (A weighted)

Wow and flutter 0.07% (WRMS)
±0.2% (DIN)

Fast forward and rewind times

Approx. 110 seconds with C-60 cassette tape

Input sensitivity and impedance

LINE IN 60 mV/47 k Ω

Output voltage and impedance

LINE OUT 400 mV/750 Ω

■ GENERAL

Power consumption 17 W

Power supply

For Great Britain and Oceania AC 50/60 Hz 240 V

For Continental Europe, F.R. Germany & Italy

AC 50/60 Hz 220 V

For others AC 50/60 Hz 110 V/127 V/220 V/240 V

Dimensions (W×H×D)

360×129×296 mm

(14 $\frac{3}{16}$ "×5 $\frac{3}{32}$ "×11 $\frac{1}{32}$ ")

Weight

4.6 kg (10.1 lb.)

Note:

Specifications are subject to change without notice.

Weight and dimensions are approximate.

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

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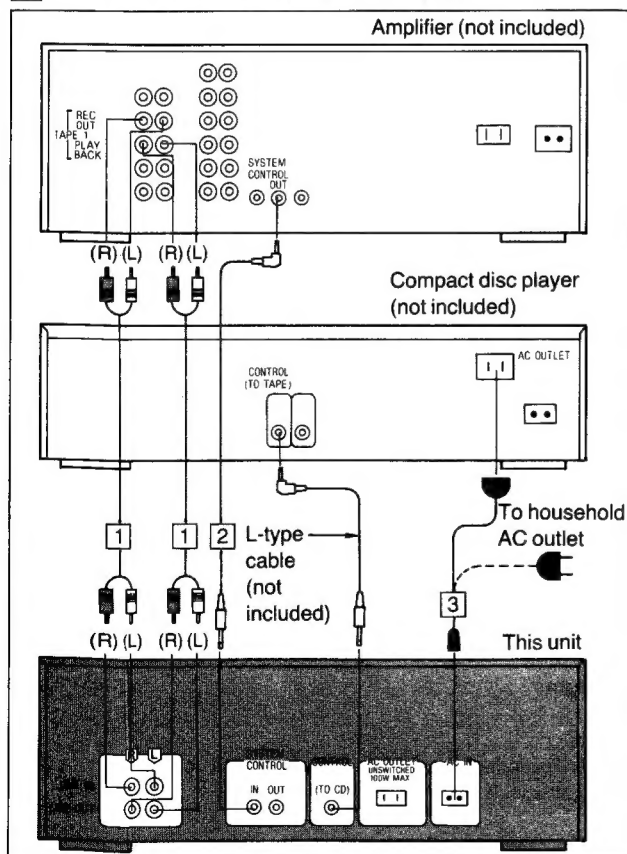
ACCESSORIES

• Stereo connection cables..... 2 (SJP2249-3)	• L-type cable..... 1 (SJP2257T)	• AC power supply cord..... 1 (SFDAC05E03: (E, EG) SJA188: (EB) RJA0004: (GC) SJA173: (GN)
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CONNECTIONS

Make connections in the numbered sequence by using the included cables.

- 1 Connect the stereo connection cables.**
- 2 Connect the L-type cable.**
- 3 Connect the AC power supply cord.**



The illustration at the left shows an example of connections made when this unit is combined with a Technics hi-fi component system, and shows only the connections to be made to and from this unit in that combination.

Refer to the illustration together with the instructions provided below.

“SYSTEM CONTROL IN” terminal

Make a connection from this terminal to the control terminal for a cassette deck on a Technics amplifier.

(For detailed information, refer to the operating instructions of the Technics amplifier.)

“SYSTEM CONTROL OUT” terminal

Make a connection from this terminal to the control terminal of a Technics graphic equalizer or to the control terminal of a Technics compact disc player. (Expected in the future.)

(For detailed information, refer to the operating instructions of the Technics graphic equalizer or the Technics compact disc player.)

“CONTROL” terminal

Make a connection from this terminal to the control terminal for a cassette deck on a Technics compact disc player.

(For detailed information, refer to the operating instructions of the Technics compact disc player.)

AC power supply cord (3)

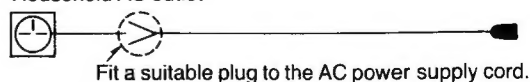
Connect this cord to the AC outlet of a compact disc player or to a household AC outlet.

Notes:

- If the cord is to be connected to the household AC outlet, cut off and dispose of the plug and replace with a suitable plug. (Refer to “For United Kingdom” above.)
- The configuration of the AC outlet and AC power supply cord differs according to area.

For United Kingdom

Household AC outlet

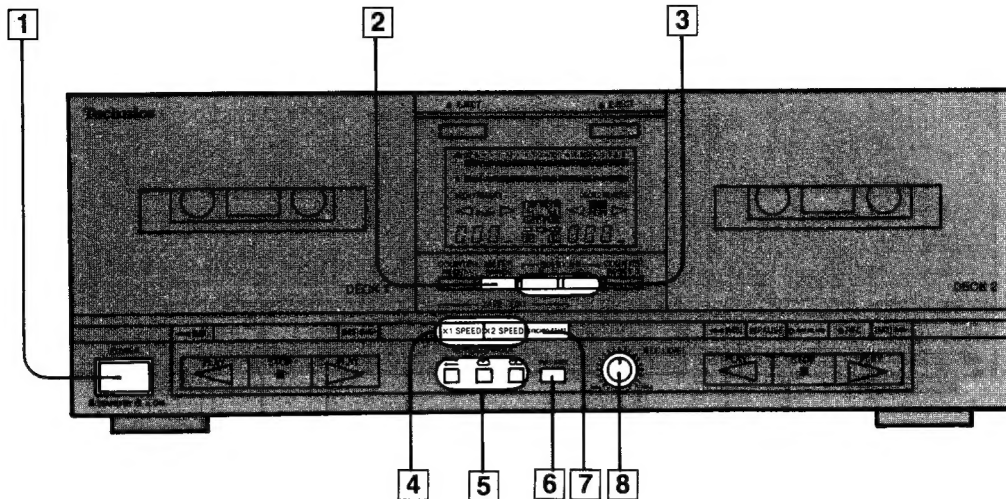


“AC OUTLET”





“UNSWITCHED” outlet

Power is always available, regardless of power switch. This outlet is only for use with other audio equipment.

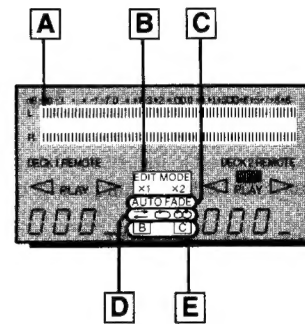
FRONT PANEL CONTROLS AND FUNCTIONS








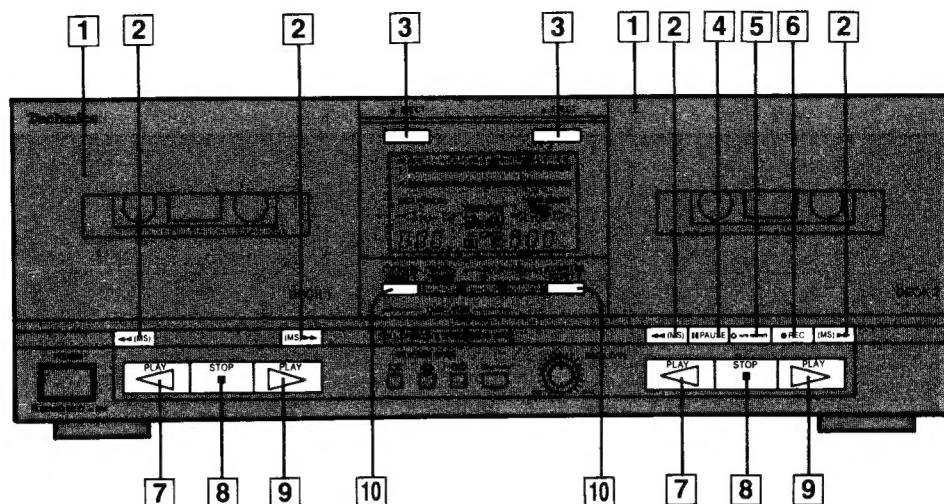
Controls common to both tape decks

- 1 Power "STANDBY  /ON" switch (POWER/ STANDBY  ON)**
This switch switches ON and OFF the secondary circuit power only. The unit is in the "standby" condition when this switch is set to the STANDBY  position. Regardless of the switch setting, the primary circuit is always "live" as long as the power cord is connected to an electrical outlet.
- 2 Meter-range selector (METER RANGE)**
This selector can be used to select the meter-range display of the input level meter.
- 3 Dolby noise-reduction buttons (DOLBY NR)**
These buttons can be used to reduce the hiss noise that is characteristic of tape. This unit is provided with both the B-type and C-type noise-reduction systems.
- 4 Edit-recording tape-speed buttons ($\times 1$ SPEED/ $\times 2$ SPEED)**
These buttons can be used to select the recording speed when a tape-to-tape recording is made.
- 5 Reverse-mode selectors (REVERSE MODE)**
These selectors can be used for selection of the reverse mode (for either playback or recording).
- 6 Auto-fade button (AUTO FADE)**
This button can be used to provide the fade-in and fade-out features during recording of tape deck 2.
- 7 Synchro-start button (SYNCHRO START)**
This button can be used to start a tape-to-tape recording, simultaneously starting tape deck 1 (the playback deck) and tape deck 2 (the recording deck).
- 8 Recording-level control (REC LEVEL)**
This control can be used to regulate the recording level of tape deck 2.

Indicators common to both tape decks



- A Input level meter**
During playback, this meter indicates the level of the recorded sound source.
During recording, it indicates the level being recorded, adjusted by the recording-level control.
- B Edit-recording tape-speed indicators (EDIT MODE, $\times 1$, $\times 2$)**
The word "EDIT MODE" and one of these indicators will illuminate to show which of the tape-to-tape recording speeds was selected by pressing one of the edit-recording tape-speed buttons.
- C Auto-fade indicator (AUTO FADE)**
This indicator illuminates to show that the tape is being recorded in the fade-in or fade-out recording mode.
- D Reverse-mode indicators (, , )**
One of these indicators illuminates to show which of the reverse modes was selected by a reverse-mode selector.
- E Dolby noise-reduction indicators (, )**
One of these indicators illuminates to show the type of Dolby noise-reduction system selected by pressing one of the Dolby noise-reduction buttons.



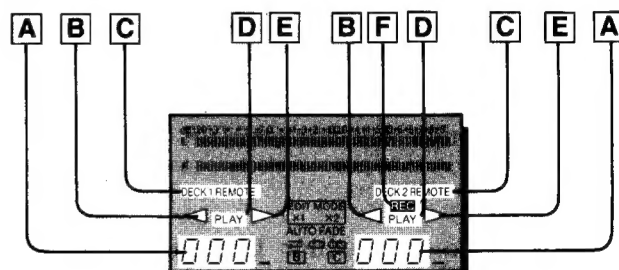
Controls applicable to tape deck 1 and/or 2

- 1** **Cassette holder**
- 2** **Rewind/fast-forward/search button**
[◀◀ (MS)/(MS) ▶▶]
This button can be used to fast-forward or rewind the tape, or to easily search for a tune's beginning quickly.
- 3** **Eject button (▲ EJECT)**
This button can be used to open the cassette holder.
- 4** **Pause button (|| PAUSE)**
This button can be used to temporarily stop the tape playback or recording, on the tape deck 2 only.
- 5** **Automatic-record-muting button**
(□ AUTO REC MUTE)
This button can be used to make a silent interval on the tape being recorded, on the tape deck 2 only.
- 6** **Record button (● REC)**
This button can be used to change the tape deck 2 to the recording stand-by mode.
- 7** **Reverse-side playback button (PLAY/◀)**
This button can be used to start the playback or recording (of tape deck 2 only) of side "B" of the cassette.
(The tape will then begin moving in the right-to-left direction.)
- 8** **Stop button (STOP/■)**
This button can be used to stop tape movement.
- 9** **Forward-side playback button (PLAY/▶)**
This button can be used to start the playback or recording (of tape deck 2 only) of side "A" of the cassette.
(The tape will then begin moving in the left-to-right direction.)

10 Tape counter reset button (COUNTER RESET 1/2)

This button can be used to reset the tape counter indication to "000".

Indicators applicable to tape deck 1 and/or 2

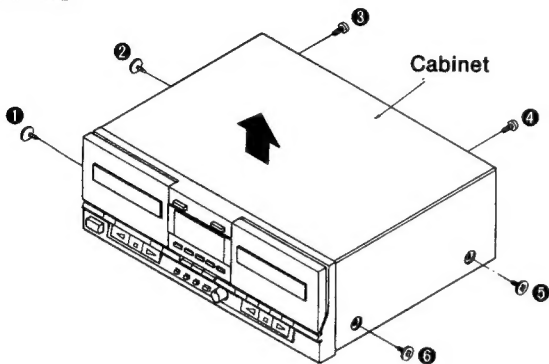
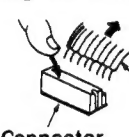
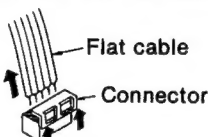
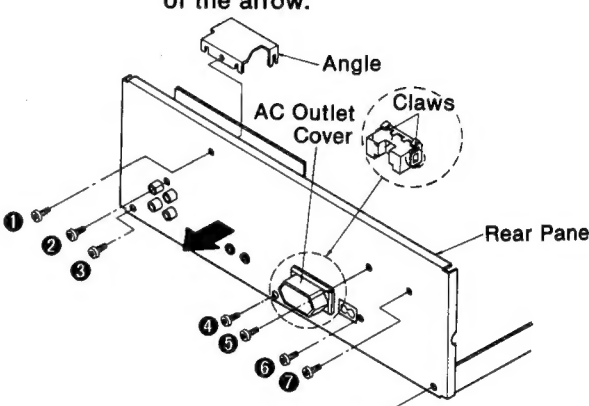
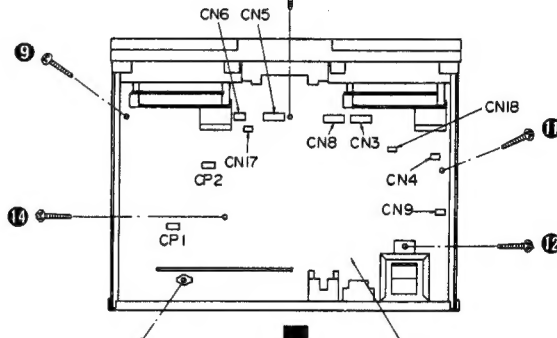
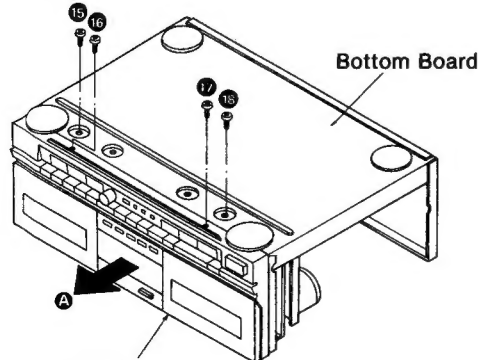
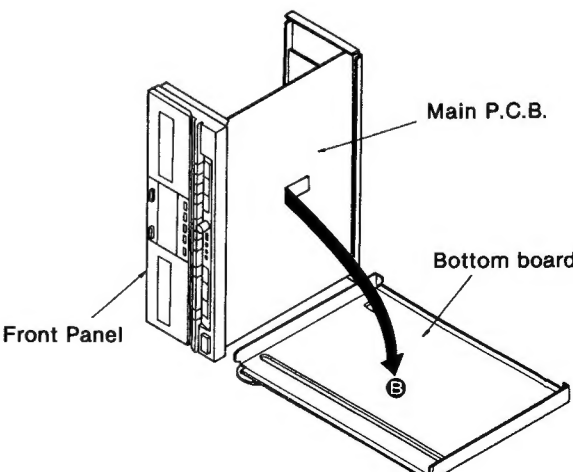


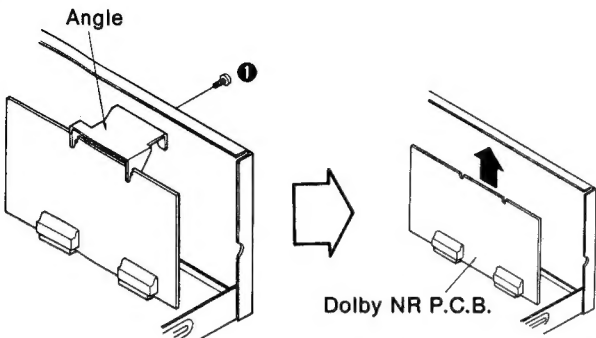
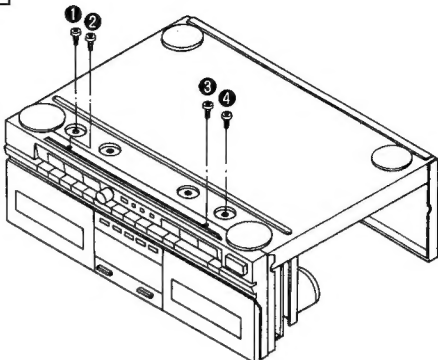
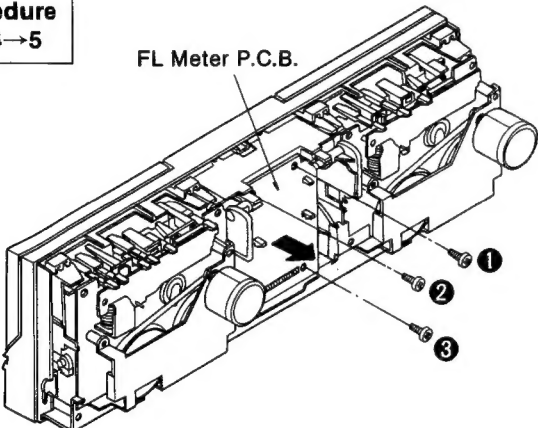
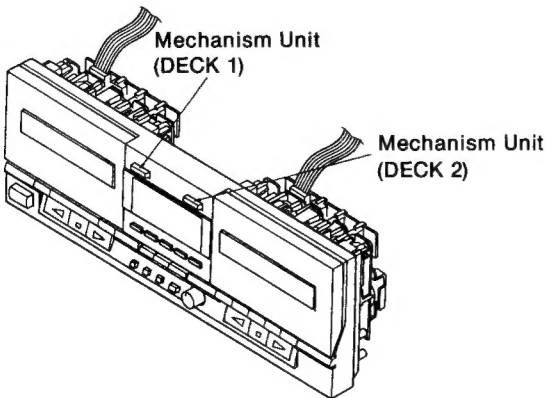
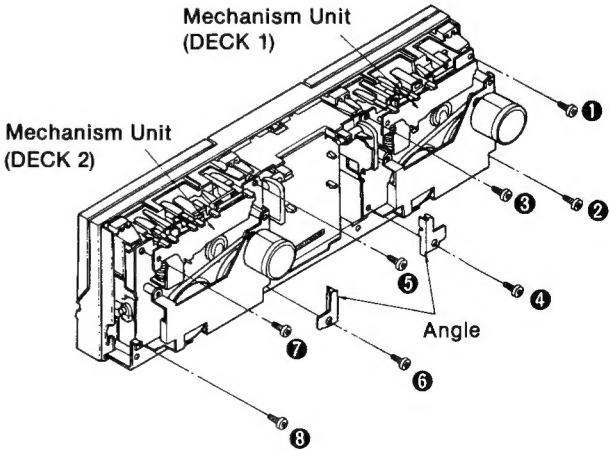
- A** **Tape counter**
Indicates the amount of tape movement (separately for tape deck 1 and tape deck 2).
- B** **Reverse-side indicator (◀)**
Illuminates during playback or recording (of tape deck 2 only) to indicate that side "B" of the tape is being used.
- C** **Remote-control indicator**
(DECK 1 REMOTE/DECK 2 REMOTE)
This indicator illuminates to indicate that this tape deck can now be controlled by the remote-control transmitter.
- D** **Playback indicator (PLAY)**
When this indicator illuminates steadily, it indicates that this tape deck is in the playback mode or the recording mode (of tape deck 2 only). When it flashes continually, this is an indication that tape deck 2 is in the pause mode or the recording stand-by mode. When it flashes rapidly, this is an indication that this tape deck is in the search mode.
- E** **Forward-side indicator (▶)**
Illuminates during playback or recording (of tape deck 2 only) to indicate that side "A" of the tape is being used.
- F** **Recording indicator (REC)**
This indicator illuminates to indicate that this tape deck 2 is in the recording stand-by mode, or is recording.

DISASSEMBLY INSTRUCTIONS

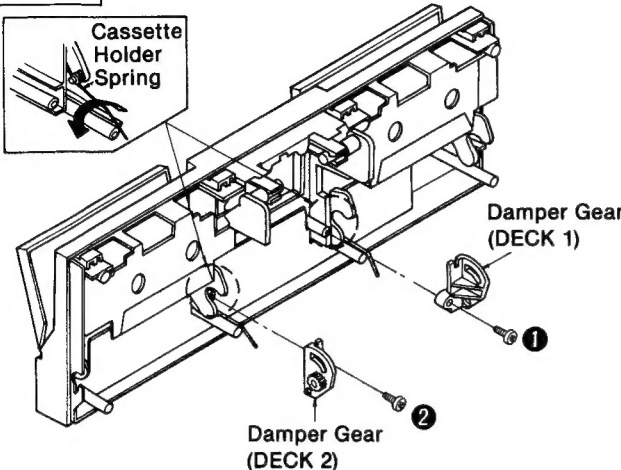
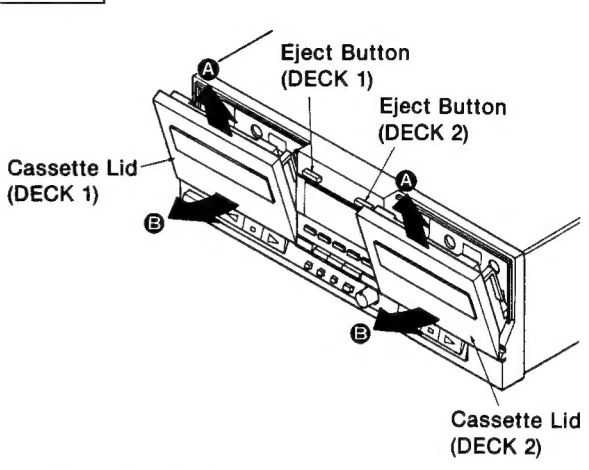
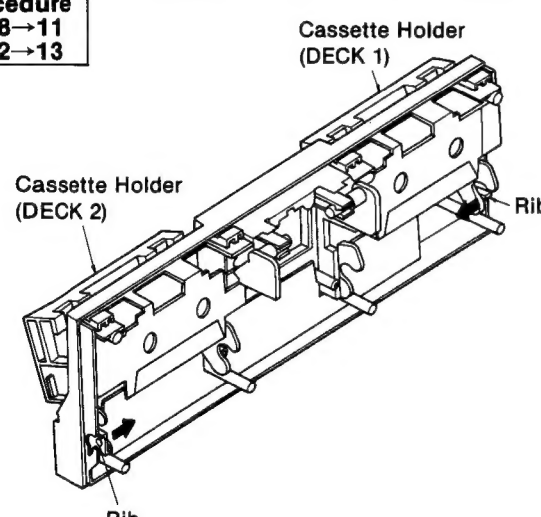
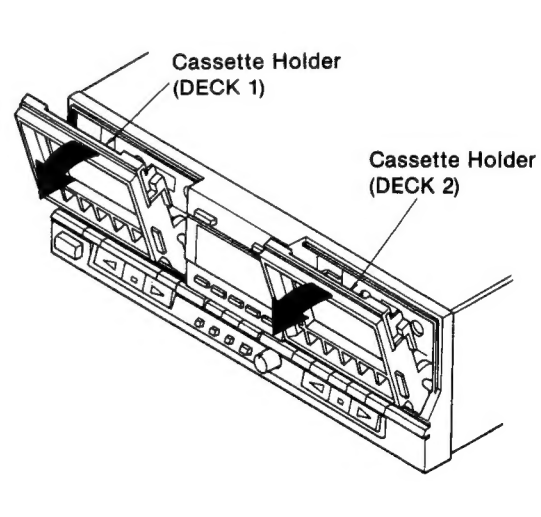
"ATTENTION SERVICER"

Some chassis components may have sharp edges. Be careful when disassembling and servicing.

Ref. No. 1	Removal of the Cabinet	Ref. No. 2	Removal of the Main P.C.B.
Procedure 1	 <p>• Remove the 6 screws (①～⑥).</p>	Procedure 1→2	<ol style="list-style-type: none"> 1. Remove the 8 screws (①～⑧). 2. Release the 2 claws of the AC outlet cover. 3. Remove the angle. 4. Remove the rear panel in the direction of the arrow.
	<ol style="list-style-type: none"> 5. Remove the 6 screws (⑨～⑭). 6. Remove the 4 connectors (CP1, CP2, CN17, CN18). 7. Remove the 6 flat cables (CN3, CN4, CN5, CN6, CN8, CN9). 8. Remove the main P.C.B. in the direction of the arrow. <p>How to remove the flat cable</p> <p>• Pull out the flat cable while pressing the connector.</p>   <p>1. Lift the connector. 2. Pull out the flat cable.</p>		 
	<p>How to check the main P.C.B.</p> <p>• When checking the soldered surfaces of main P.C.B. and replacing the parts, do as show.</p> <ol style="list-style-type: none"> 1. Remove the 13 screws (①, ④, ⑧～⑯). 2. Remove the front panel in the direction of the arrow A. 		<ol style="list-style-type: none"> 3. Remove the bottom board in the direction of the arrow B. 4. Reinstall the front panel to the main P.C.B. 

Ref. No. 3	Removal of the Dolby NR P.C.B.	Ref. No. 4	Removal of the Front Panel
Procedure 1→3	 <p>1. Remove the 1 screw (❶).</p> <p>2. Remove the dolby NR P.C.B. in the direction of the arrow.</p>	Procedure 1→4	 <p>1. Remove the 4 screws (❶~❹).</p> <p>2. Remove the 4 connectors (CP1, CP2, CN17, CN18).</p> <p>3. Remove the 6 flat cables (CN3, CN4, CN5, CN6, CN8, CN9).</p> <p>4. Remove the front panel in the direction of the arrow.</p>
Ref. No. 5	Removal of the FL Meter P.C.B.		
Procedure 1→4→5	 <p>1. Remove the 3 screws (❶~❸).</p> <p>2. Remove the FL meter P.C.B. in the direction of the arrow.</p>		
Ref. No. 6	Removal of the Mechanism Units	■ Mechanism unit (DECK 2)	
Procedure 1→4→6	■ Mechanism unit (DECK 1) <p>1. Push the eject button.</p> <p>2. Remove the 4 screws (❶~❹).</p> 	<p>1. Push the eject button.</p> <p>2. Remove the 4 screws (❺~❽).</p> 	

Ref. No. 7	Removal of the Mechanism Angle	Ref. No. 8	Removal of the Power Switch P.C.B.
Procedure 1→4→5 →6→7	<div data-bbox="156 320 774 790"> </div> <p>• Remove the 4 screws (①～④).</p>	Procedure 7→8	<div data-bbox="898 331 1457 745"> </div> <ol style="list-style-type: none"> 1. Remove the power switch button by pushing it from behind the front panel. 2. Remove the power switch P.C.B. in the direction of the arrow.
Ref. No. 9	Removal of the Eject Angle, Eject Button, Eject Rod and Eject Lever		
Procedure 1→4→5 →6→9	<div data-bbox="156 1014 579 1395"> </div> <div data-bbox="635 925 1481 1384"> </div> <ol style="list-style-type: none"> 1. Remove the 1 screw (①). 2. Pull out the eject angle in the direction of the arrow A. 3. Pull out the claw of the eject rod in the direction of the arrow B, remove the eject buttons and the eject rod in the arrow C. 4. Turn the eject lever in the direction of the arrow D, and remove the eject lever in the direction of the arrow E. 		
Ref. No. 10	Removal of the Operation P.C.B.		
Procedure 7→8→10	<div data-bbox="292 1641 659 2033"> </div> <div data-bbox="866 1574 1457 2011"> </div> <ol style="list-style-type: none"> 1. Pull out the rec level knob. 2. Remove the 4 screws (①～④). 3. Release the 12 claws. 		

Ref. No. 11	Removal of the Damper Gear and Cassette Holder Spring	Ref. No. 12	Removal of the Cassette Lid
Procedure 7→8→11	 <ol style="list-style-type: none"> 1. Remove the 2 screws (①, ②). 2. Remove the damper gear. 3. Remove the cassette holder spring in the direction of the arrow. 	Procedure 12	 <ol style="list-style-type: none"> 1. Push the eject button. 2. Pull out the cassette lid in the direction of the arrow A and then remove it in the direction of arrow B.
Ref. No. 13	Removal of the Cassette Holder		
Procedure 7→8→11 →12→13	 <ol style="list-style-type: none"> 1. Remove the rib in the direction of the arrow. 		 <ol style="list-style-type: none"> 2. Remove the cassette holder in the direction of the arrow.

MEASUREMENT AND ADJUSTMENT METHODES

Measurement Condition

- Rec. level control; Maximum
- Reverse-mode selector switch; \longleftrightarrow
- Edit-recording tape-speed selector; X1
- Dolby NR switch; Off

- Make sure heads are clean
- Make sure capstan and pressure roller are clean
- Judgeable room temperature $20 \pm 5^\circ\text{C}$ ($68 \pm 9^\circ\text{F}$)

Measuring instrument

- EVM (Electronic Voltmeter)
- Oscilloscope
- Digital frequency counter
- AF oscillator

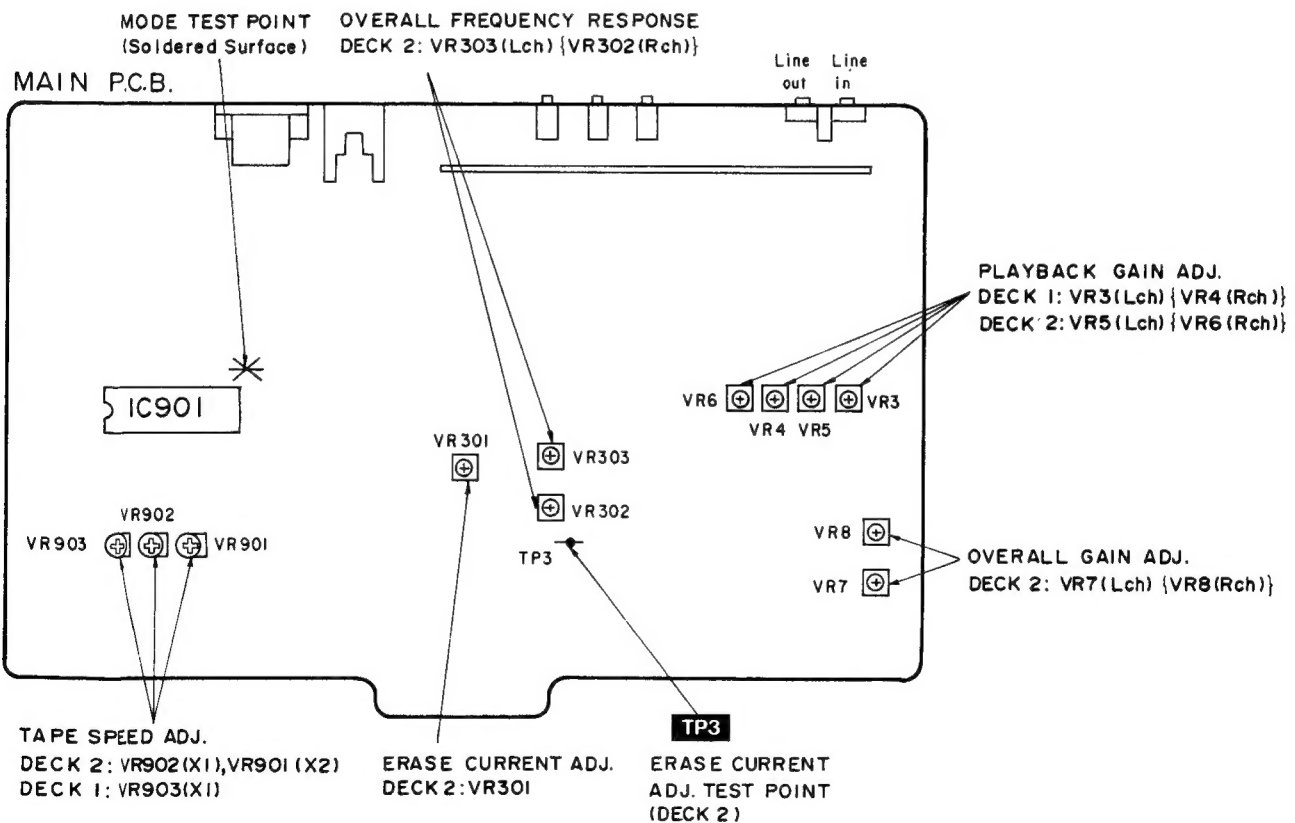
- ATT (Attenuator)
- DC voltmeter
- Resistor (600Ω)

Test tape

- Head azimuth adjustment (8kHz, -20dB); QZZCFM
- Tape speed adjustment (3kHz, -10dB); QZZCWAT
- Playback frequency response (315Hz, 12.5kHz, 10kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz, 63Hz, -20dB); QZZCFM

- Playback gain adjustment (315Hz, 0dB); QZZCFM
- Overall frequency response, Overall gain adjustment
Normal reference blank tape; QZZCRA
CrO₂ reference blank tape; QZZCRX
Metal reference blank tape; QZZCRZ

Adjustment Points

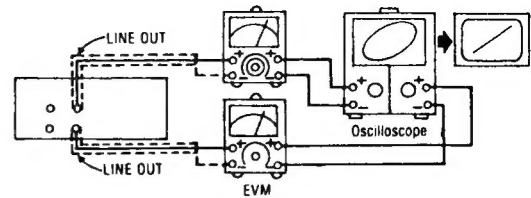
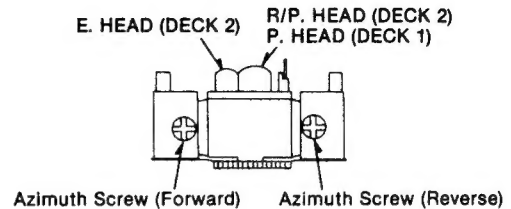


HEAD AZIMUTH ADJUSTMENT (DECK 1/2)

1. Playback the azimuth adjustment portion (8kHz, -20dB) of the test tape (QZZCFM). Vary the azimuth adjusting screw until the outputs of the L-CH and R-CH are maximized and the lissajous waveform, as illustrated, approaches 0 degrees.

Note: If L-CH and R-CH are not maximized at the same point, adjust to the point where the levels of each channel are maximized and equal.

2. Perform the same adjustment in the play mode.
3. After the adjustment, apply screwlock to the azimuth adjusting screw.

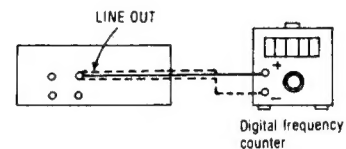
**Fig. 1****Fig. 2****TAPE SPEED ADJUSTMENT (DECK 1/2)****Normal speed**

1. Shift the edit-recording tape-speed selector to "X1".
2. Playback the middle portion of the test tape (QZZCWAT).
3. Adjust Deck 1=VR902 and Deck 2=VR903 so that the output is within the standard value.

High speed

4. Shift the edit-recording tape speed switch to "X2".
5. Playback the middle portion of the test tape (QZZCWAT).
6. Adjust Deck 1=VR901 so that the output is within the standard value.

Note: The Normal speed adjustment must be done before the High speed adjustment.

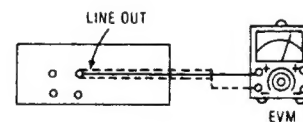
**Fig. 3**

Standard value: 3000 ± 15 Hz (Normal), 6000 ± 600 Hz (High)

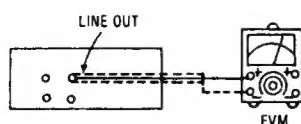
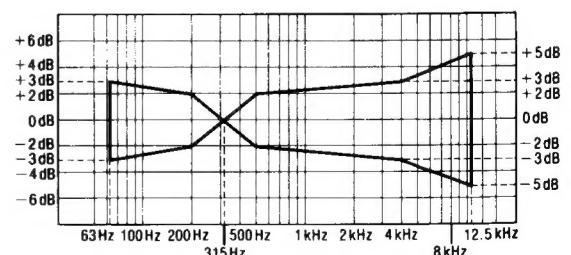
PLAYBACK GAIN ADJUSTMENT (DECK 1/2)

1. Playback the gain adjusted portion (315Hz, 0dB) of the test tape (QZZCFM).
2. Adjust Deck 1=VR3 (L-CH) [[VR4 (R-CH)]] and Deck 2=VR5 (L-CH) [[VR6 (R-CH)]] so that the output is within the standard value.

Standard value: 0.4V ± 0.5dB

**Fig. 4****PLAYBACK FREQUENCY RESPONSE (DECK 1/2)**

1. Playback the frequency response portion (315Hz, 12.5kHz~63Hz, -20dB) of the test tape (QZZCFM).
2. Assure that the frequency response is within the range shown in Fig. 6 for both L-CH and R-CH.

**Fig. 5****Fig. 6**

ERASE CURRENT ADJUSTMENT (DECK 2)

1. Insert the Metal blank test tape (QZZCRZ) and set the unit to the Record Pause mode.
2. Adjust VR301 so that the output between TP3 and GND is within the standard value.

Standard value: $190 \pm 5 \text{ mA (Metal)...EVM Reading: } 190 \pm 5 \text{ mV}$

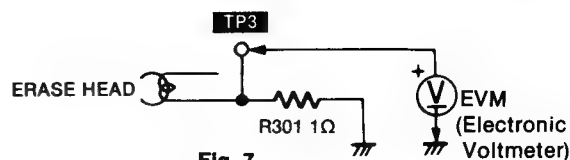


Fig. 7

OVERALL FREQUENCY RESPONSE (DECK 2)

1. Insert the Normal blank test tape (QZZCRA) and set the unit to the Record Pause mode.
2. Apply a reference input signal (1 kHz, -24 dB) through an attenuator.
3. Attenuate the signal by 20 dB and adjust the frequency from 50 Hz ~ 10 kHz.
4. Record the frequency sweep.
5. Playback the recorded signal and assure that it is within the range shown in Fig. 8 in comparison to the reference frequency (1 kHz).
6. If it is not within the standard range, adjust VR303 (L-CH) and VR302 (R-CH) so that the frequency level is within the standard range.
 - Level up in high frequency rangeIncrease the bias current.
 - Level down in high frequency range ...Decrease the bias current.
7. Repeat steps 2~6 above using the CrO₂ tape (QZZCRX) and the Metal tape (QZZCRZ) increasing the frequency range to 12.5 kHz (50 Hz ~ 12.5 kHz).
8. Assure that the level is within the range shown in Fig. 9.

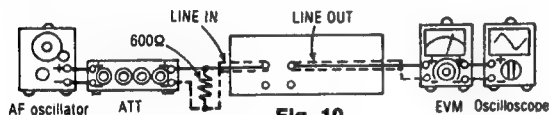


Fig. 10

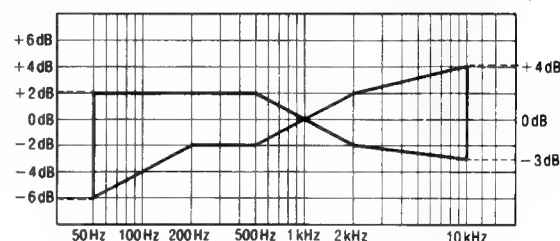
Normal Overall frequency response chart (NR OUT)

Fig. 8

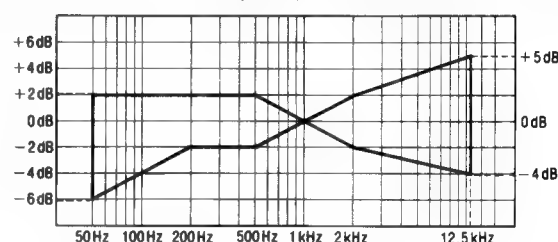
CrO₂ Metal Overall frequency response chart (NR OUT)

Fig. 9

OVERALL GAIN ADJUSTMENT (DECK 2)

1. Insert the Normal blank test tape (QZZCRA) and set the unit to the Record pause mode.
2. Apply a reference input signal (1 kHz, -24 dB). Attenuate the output so that its level becomes 0.4 V.
3. Record this input signal.
4. Playback the signal recorded in step 3 above, and assure that the output is within the standard value.
5. If it is not within the standard value, adjust VR7 (L-CH) and VR8 (R-CH).
6. Repeat the step 2~5 above until the output is within the standard value.

Standard value: $0.4 \text{ V} \pm 0.5 \text{ dB}$

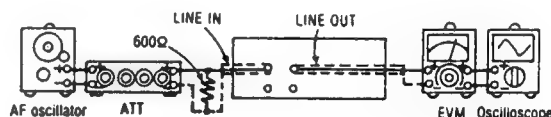


Fig. 11

■ TERMINAL FUNCTION OF IC'S

• IC901 (M50963-227SP): MICROCOMPUTER (This microcomputer is used for mechanical operation.)

Pin No.	Mark	I/O Division	Function	Pin No.	Mark	I/O Division	Function
1	V _{CC}	I	Power supply terminal	24	DATA IN (P3 (1))	I	Bus data signal
2	AV _{SS} (GND)	—	GND terminal	25	DATA OUT (P3 (0))	O	
3	V _{REF}	I	Reference voltage terminal	26	POF IN (INT1)	I	"AC POWER OFF" det. terminal
4	D-A	—	Not used, open	27	CNV _{SS} (GND)	—	GND terminal
5	PWM	O	Pulse width modulated signal	28	RESET	I	Reset signal ("L"=RESET)
6	P6 (3)	—	Not used, open	29	X _{IN}	I	Clock OSC terminal
7	RMT1 (P6 (2))	O	Rec. mute signal of deck 1 (Mute "ON"="H", Mute "OFF"="L")	30	X _{OUT}	O	
8	RMT2 (P6 (1))	O	Rec. mute signal of deck 2 (Mute "ON"="H", Mute "OFF"="L")	31	φ	—	Not used, open
9	DMT (P6 (0))	O	Line out mute signal (Mute "ON"="H", Mute "OFF"="L")	32	V _{SS} (GND)	—	GND terminal
10	VR IN (AN (7))	I	Variable voltage level signal of rec. level volume	33	TEST (P5 (7))	—	Test terminal (Normal="H")
11	RLV (AN (6))	I	Peak voltage terminal of rec. signal (Not used, open)	34	PW IN (P5 (6))	I	Power switch signal ("ON": "L", "OFF": "H")
12	KEY2 (AN (5))	I	Operation key switches terminal	35	REEL2 (P5 (5))	I	Reel rotation pulse signal of deck 2 "ON": "L", "OFF": "H"
13	KEY1 (AN (4))	I		36	REEL1 (P5 (4))	I	
14	QUICK2 (AN (3))	I	Leader tape det. signal of deck 2	37	R. INH2 (P5 (3))	I	Reverse rec. inh. switch select terminal of deck 2 "ON": "L", "OFF": "H"
15	QUICK1 (AN (2))	I	Leader tape det. signal of deck 1	38	F. INH2 (P5 (2))	I	Forward rec. inh. switch select terminal of deck 2 "ON": "L", "OFF": "H"
16	ARM2 (P4 (1))	I	"AUTO REC MUTE" key switch signal of deck 2	39	MODE2 (P5 (1))	I	Mechanism mode switch select terminal of deck 2 "ON": "L", "OFF": "H"
17	ARM1 (P4 (0))	I	"AUTO REC MUTE" key switch signal of deck 1 (Not used, open)	40	HALF2 (P5 (0))	I	Cassette half detection switch terminal of deck 2 "ON": "L", "OFF": "H"
18	REC2 (P3 (7))	O	Rec. mode signal of deck 2	41	MPX (P1 (7))	O	MPX filter "ON/OFF" select signal ("ON": "H", "OFF": "L")
19	REC1 (P3 (6))	O	Rec. mode signal of deck 1 (Not used, open)	42	T2 (P1 (6))	O	Playback amp. select signal (Deck 2-P.B.: "L", Others: "H")
20	SYNCHRO REC (P3 (5))	I	CD synchro rec. signal	43	X2 (P1 (5))	O	Playback equalizer select signal with tape edit of deck 1
21	REC ENABLE (P3 (4))	O	Rec. "STAND BY" signal	44	P1 (4)	—	Not used, open
22	CLK IN (P3 (3))	I	Bus clock signal	45	P1 (3)	—	Not used, open
23	CLK OUT (P3 (2))	O		46	C (P1 (2))	O	Dolby NR C "ON/OFF" select signal ("ON": "L", "OFF": "H")

I/O Division	Function
0	Dolby NR B "ON/OFF" select signal ("ON": "L", "OFF": "H")
0	Encode/decode select signal of dolby NR circuit
—	Not used, open
0	"ON/OFF" select signal of power supply circuit ("ON": "L", "OFF": "H")
0	Serial data signal to FL display
0	"ON/OFF" select signal of "AUTO FADE" display ("ON": "L", "OFF": "H")
—	Not used, open
0	Music select det. signal ("H": NO SIGNAL, "L": ON SIGNAL)
0	Reverse rec. inh. switch select terminal of deck 1 ("ON": "L", "OFF": "H")
0	Forward rec. inh. switch select terminal of deck 1 ("ON": "L", "OFF": "H")

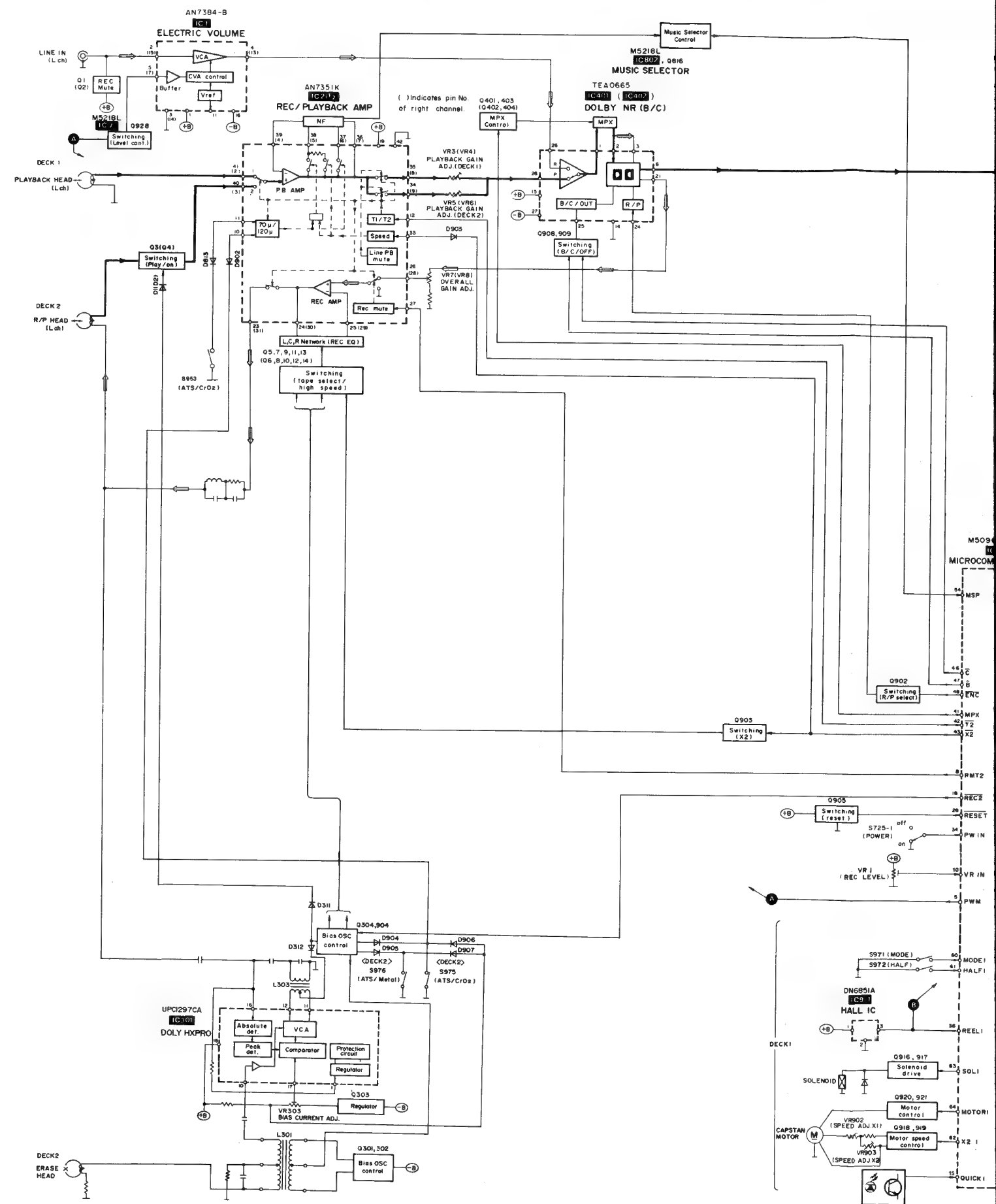
Pin No.	Mark	I/O Division	Function
57	X2 2 (P2 (7))	O	Mechanism motor speed select signal of deck 2 ("X1": "H", "X2": "L")
58	SOL2 (P2 (6))	O	Mechanism plunger "ON/OFF" select signal of deck 2 ("ON": "H", "OFF": "L")
59	MOTOR2 (P2 (5))	O	Mechanism motor "ON/OFF" select signal of deck 2 ("ON": "H", "OFF": "L")
60	MODE1 (P2 (4))	I	Mechanism mode "ON/OFF" select signal of deck 1 ("ON": "L", "OFF": "H")
61	HALF1 (P2 (3))	I	Cassette half detection switch terminal of deck 1 ("ON": "L", "OFF": "H")
62	X2 1 (P2 (2))	O	Mechanism motor speed select signal of deck 1 ("X1": "H", "X2": "L")
63	SOL1 (P2 (1))	O	Mechanism plunger "ON/OFF" select signal of deck 1 ("ON": "H", "OFF": "L")
64	MOTOR1 (P2 (0))	O	Mechanism motor "ON/OFF" select signal of deck 1 ("ON": "H", "OFF": "L")

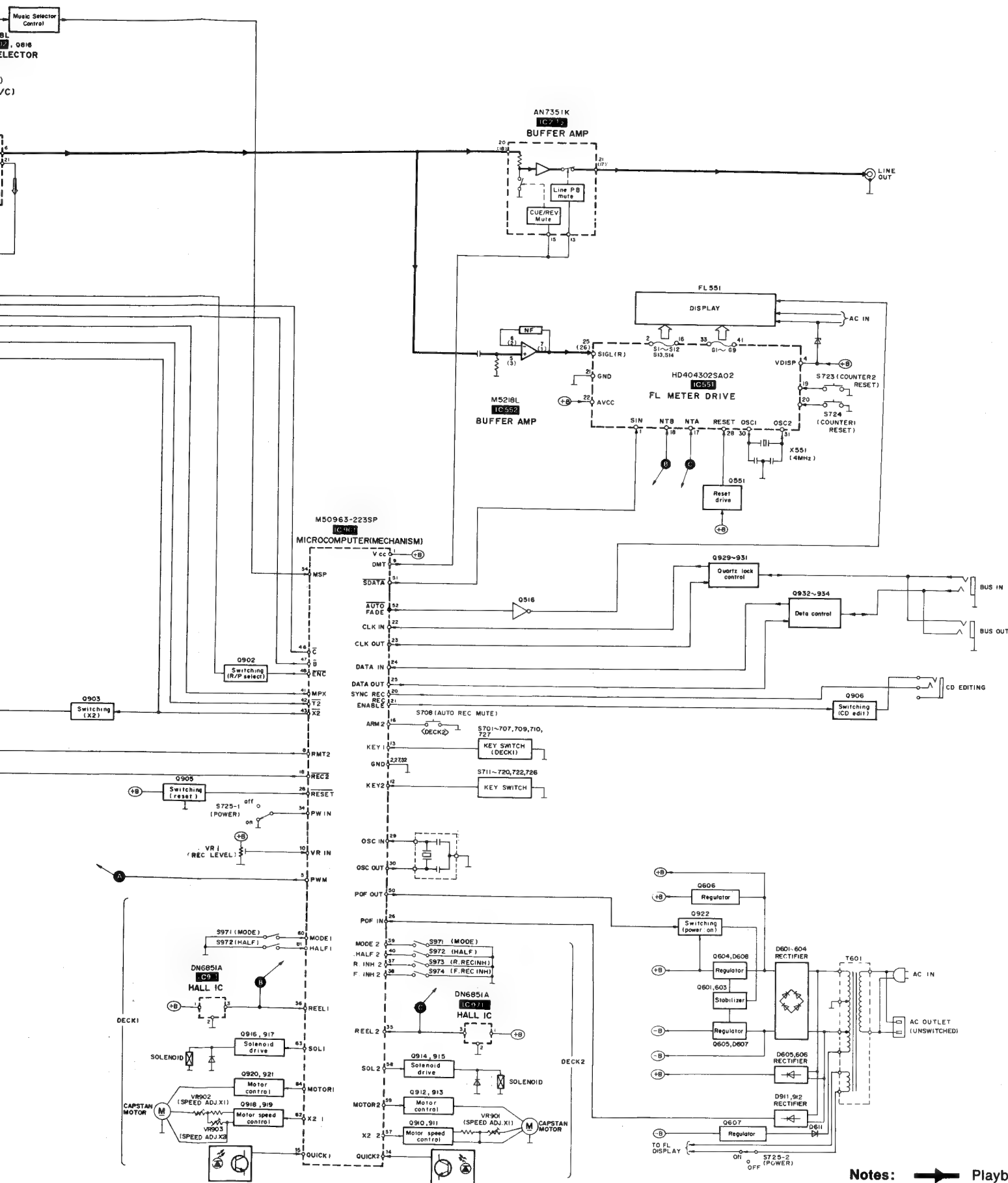
ROCOMPUTER (This microcomputer is used for FL meter operation.)

Function
Signal
Signal for FL display
Power supply (V _{CC})
Signal of deck 2
Reset terminal of
Reset terminal of
Terminal

Pin No.	Mark	I/O Division	Function
23	—	—	—
24	VRIN	I	Rec level control signal
25	SIGL	I	Lch level signal
26	SIGR	I	Rch level signal
27	AVSS	—	GND terminal
28	RESET	I	Reset terminal ("RESET": "H")
29	TEST	I	Test terminal
30	OSC1	O	Clock OSC terminal (4MHz)
31	OSC2	I	—
32	VCC	I	Power supply terminal
33	G1	O	Grid signal for FL display
41	G9	O	—
42	PWM	—	Not used, open

BLOCK DIAGRAM

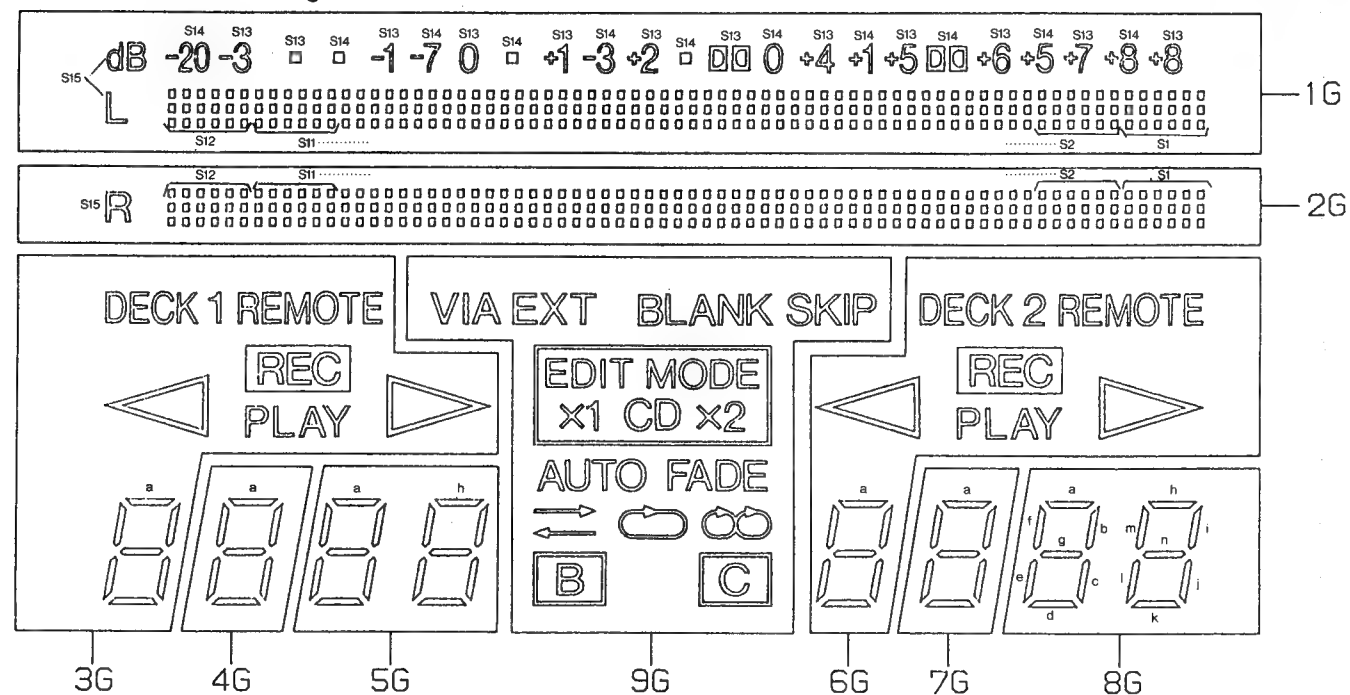




Notes: Playback signal
 Recording signal

INTERNAL CONNECTION OF FL

Grid connection diagram



Anode connection table

	9G	8G	7G	6G	5G	4G	3G	2G	1G
S1		n	-		n	-			
S2		j	-	play	j	-	play		
S3		l	-		l	-			
S4	EDIT MODE	k	-	DECK 2 REMOTE	k	-	DECK 1 REMOTE		
S5	CD	h	-	REC	h	-	REC		
S6	x2	a	a	a	a	a	a		
S7	x1	b	b	b	b	b	b		
S8	-	f	f	f	f	f	f		
S9	B	g	g	g	g	g	g		
S10	C	c	c	c	c	c	c		
S11	VIA EXT	e	e	e	e	e	e		
S12	BLANK SKIP	d	d	d	d	d	d		
S13	-	i	-	-	i	-	-	-	S13
S14	-	m	-	-	m	-	-	-	S14
S15	-	-	-	-	-	-	-	R	dB L
S16	AUTO FADE	-	-	-	-	-	-	-	-

Pin connection

PIN NO.	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	F	F	N	N	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	N	9	5	4	3	8	7	6	2	1	N	N	F	F

A



C

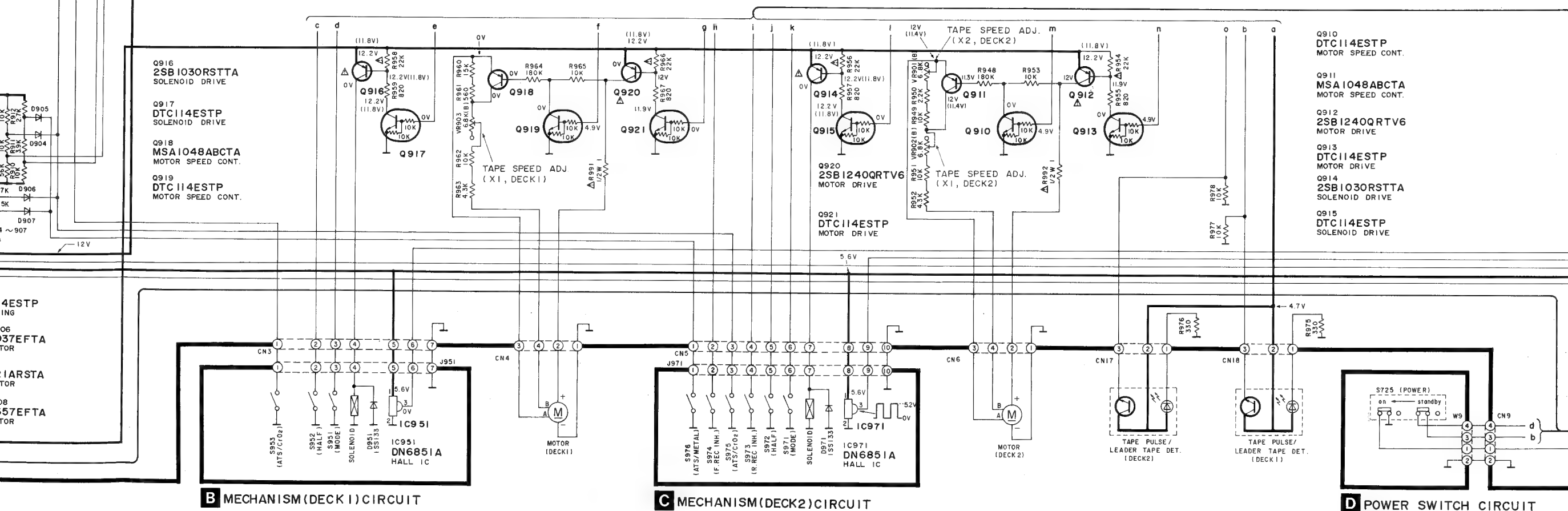
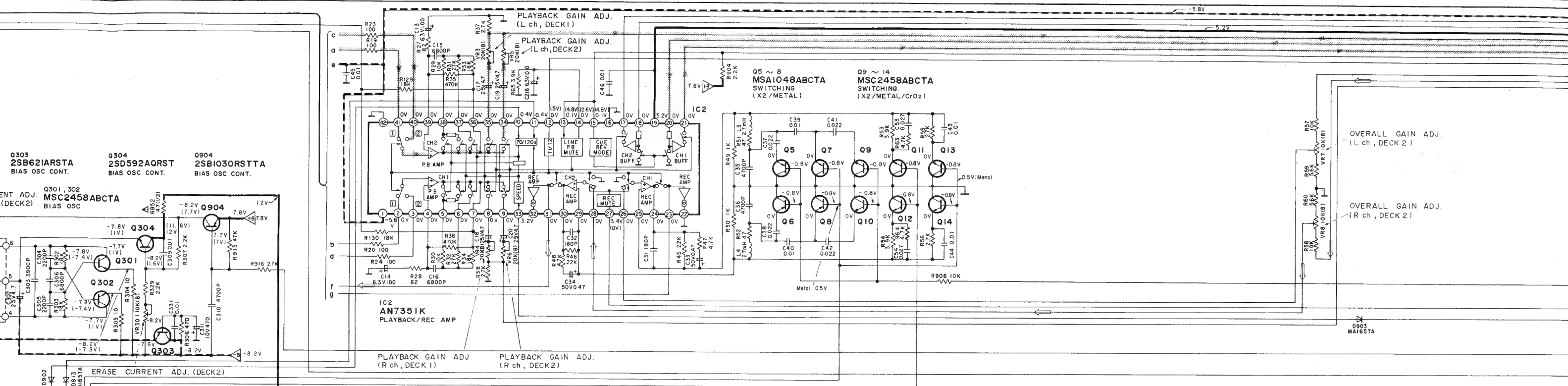
D

E

•

G

B MECHANIS

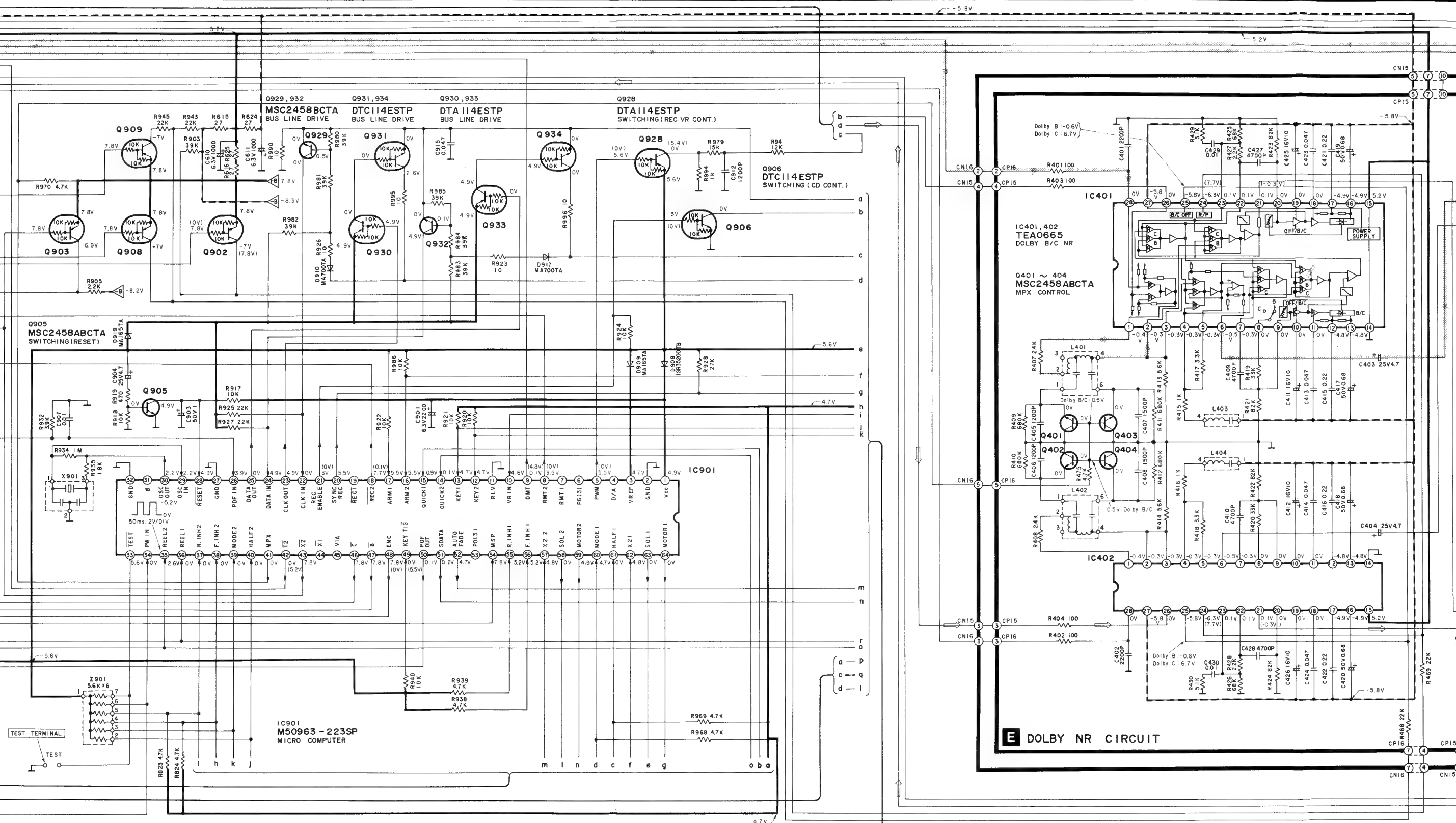


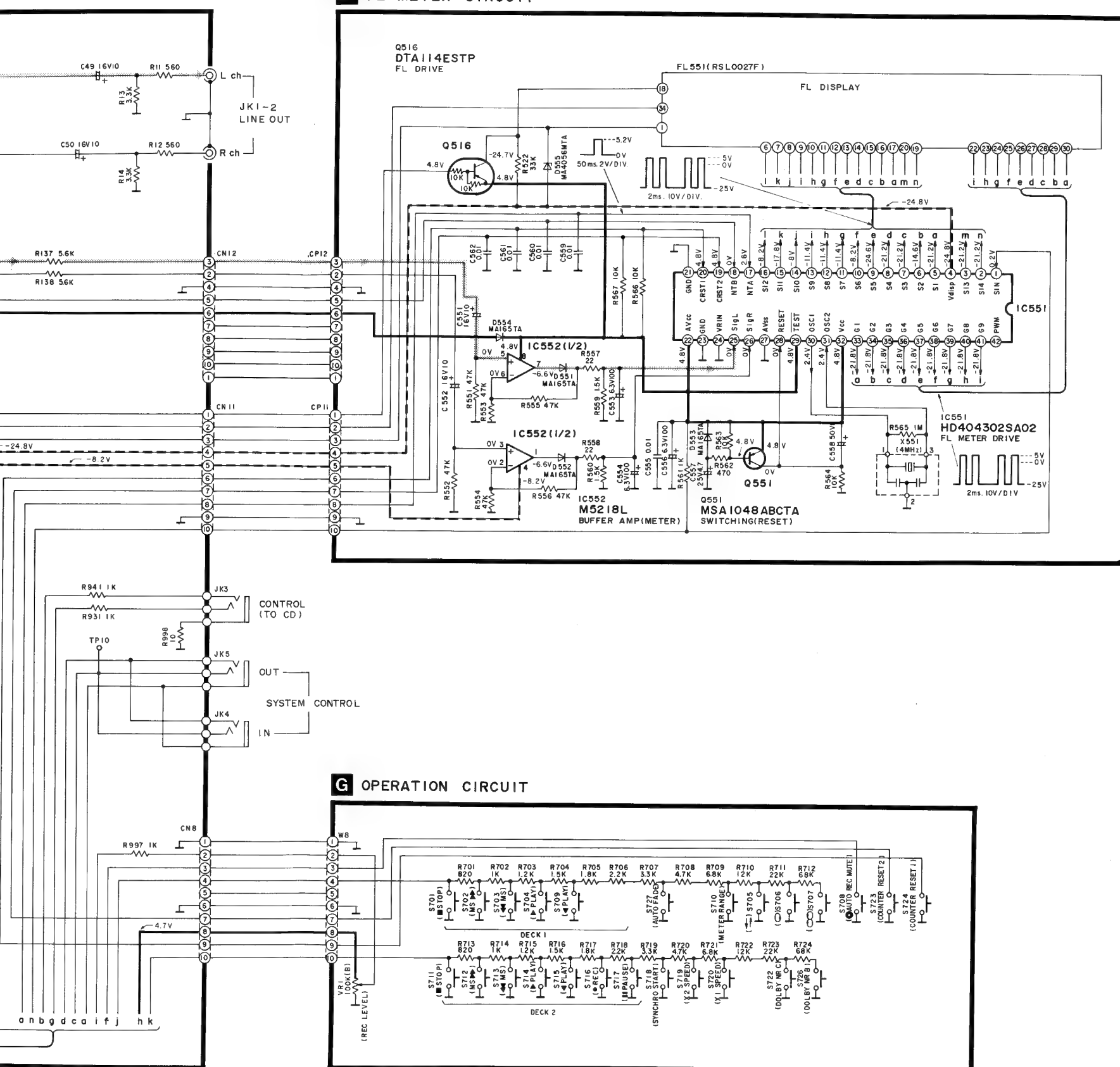
B MECHANISM (DECK 1) CIRCUIT

C MECHANISM (DECK 2) CIRCUIT

D POWER SWITCH CIRCUIT

Q902, 903, 908, 909
DTA114ESTP
SWITCHING
(B/C, X2,
ENCODE/DECODE)



F FL METER CIRCUIT**G** OPERATION CIRCUIT**SCHEMATIC DIAGRAM** (Parts list on pages 30~32, 42~44.)

(This schematic diagram may be modified at any time with development of new technology.)

Notes:

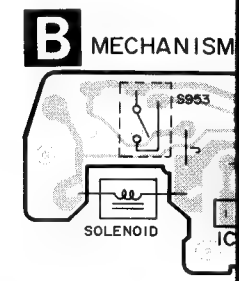
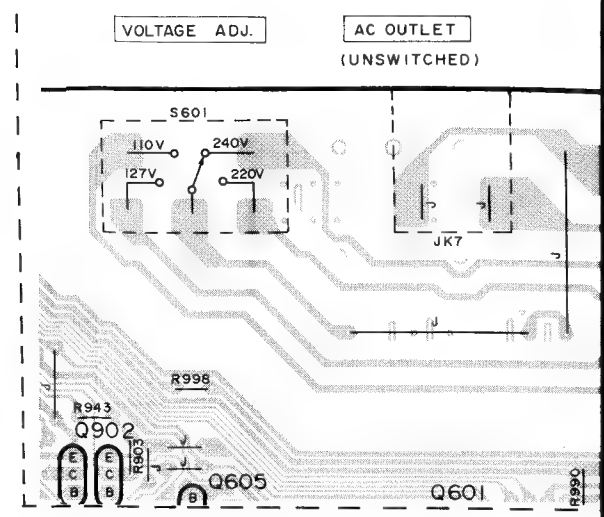
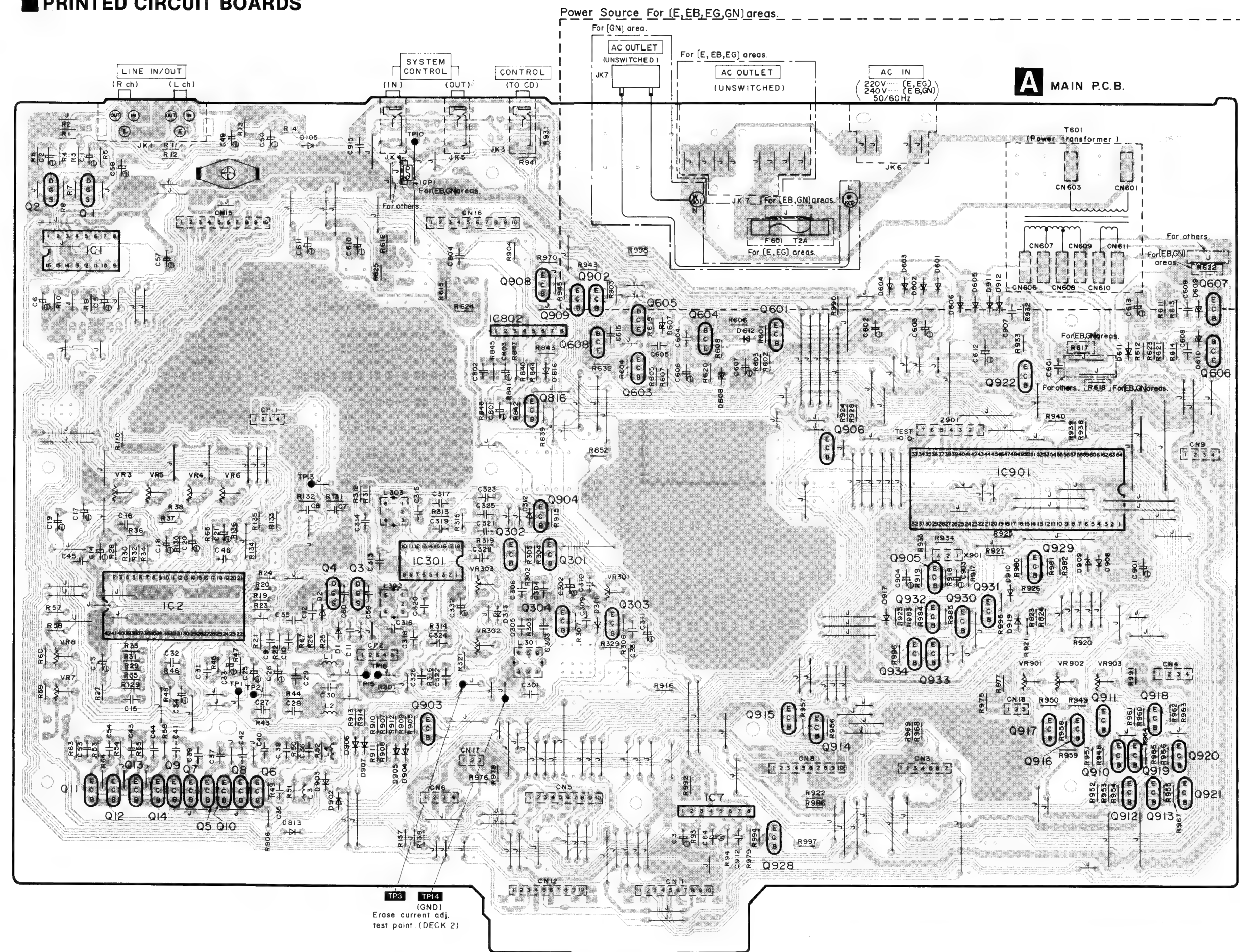
- S601: Voltage selector in "240V" position. (For [GC] area only.) (100V ↔ 127V ↔ 220V ↔ 240V)
 - S701: Stop switch in "off" position. (DECK 1)
 - S702: F.F. switch in "off" position. (DECK 1)
 - S703: Rew. switch in "off" position. (DECK 1)
 - S704: Forward-side playback switch in "off" position. (DECK 1)
 - S705: Reverse mode switch (↔) in "off" position.
 - S706: Reverse mode switch (⏮) in "off" position.
 - S707: Reverse mode switch (⏭) in "off" position.
 - S708: Auto rec. mute switch in "off" position. (DECK 2)
 - S709: Reverse-side playback switch in "off" position. (DECK 1)
 - S710: Meter-range selector switch in "off" position.
 - S711: Stop switch in "off" position. (DECK 2)
 - S712: F.F. switch in "off" position. (DECK 2)
 - S713: Rew. switch in "off" position. (DECK 2)
 - S714: Forward-side playback switch in "off" position. (DECK 2)
 - S715: Reverse-side playback switch in "off" position. (DECK 2)
 - S716: Record switch in "off" position. (DECK 2)
 - S717: Pause switch in "off" position. (DECK 2)
 - S718: Synchro-start switch in "off" position.
 - S719: Editing tape speed selector (X2) in "off" position.
 - S720: Editing tape speed selector (X1) in "off" position.
 - S722: Dolby NR C switch in "off" position.
 - S723: Tape counter reset 2 switch in "off" position.
 - S724: Tape counter reset 1 switch in "off" position.
 - S725: Power switch in "on" position.
 - S726: Dolby NR B switch in "off" position.
 - S727: Auto-fade switch in "off" position.
 - S951: Mode switch in "off" position. (DECK 1)
 - S952: Cassette half detection switch in "off" position. (DECK 1)
 - S953: ATS (CrO₂) switch in "off" position. (DECK 1)
 - S971: Mode switch in "off" position. (DECK 2)
 - S972: Cassette half detection switch in "off" position. (DECK 2)
 - S973: Reverse rec. inhibit switch in "off" position. (DECK 2)
 - S974: Forward rec. inhibit switch in "off" position. (DECK 2)
 - S975: ATS (CrO₂) switch in "off" position. (DECK 2)
 - S976: ATS (Metal) switch in "off" position. (DECK 2)
- Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.
1K=1,000 (Ω), 1M=1,000k (Ω)
Capacity are in micro-farads (μF) unless specified otherwise.
All voltage values shown in circuitry are under no signal condition and playback mode with volume control at minimum position otherwise specified.
()..... Voltage values at record mode.
For measurement us EVM.
- Important safety notice**
Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
- (Δ) indicates +B (bias).
 - (Δ) indicates -B (bias).
 - (Δ) indicates the flow of the playback signal.
 - (Δ) indicates the flow of the record signal.
- * Caution!**
IC and LSI are sensitive to static electricity. Secondary trouble can be prevented by taking care during repair.
* Cover the parts boxes made of plastics with aluminum foil.
* Ground the soldering iron.
* Put a conductive mat on the work table.
* Do not touch the legs of IC or LSI with the fingers directly.

TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

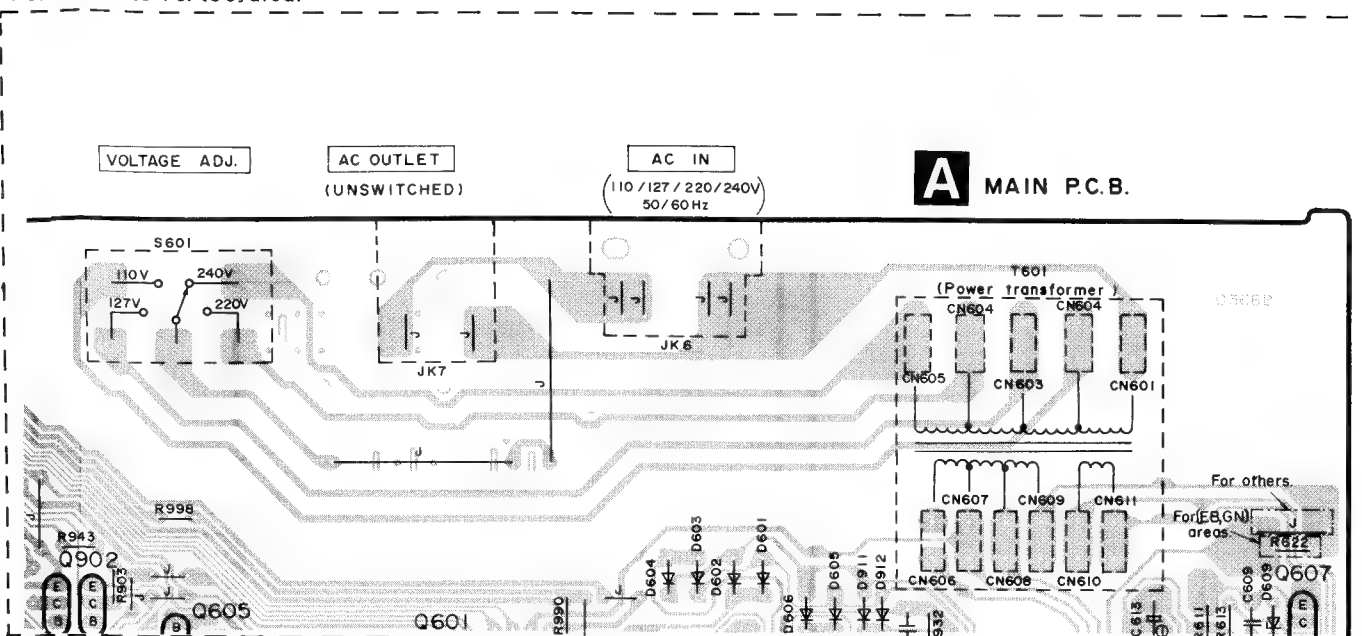
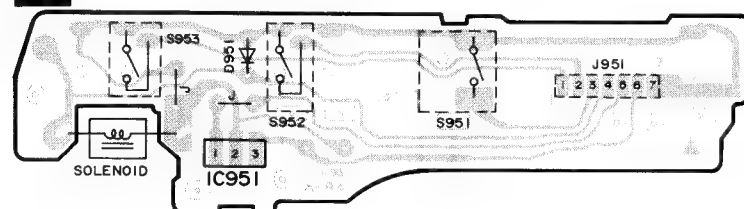
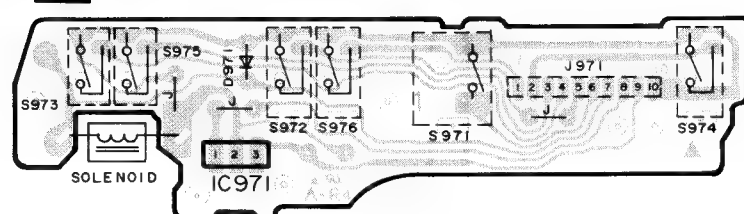
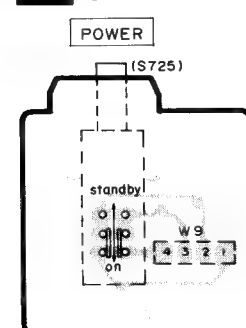
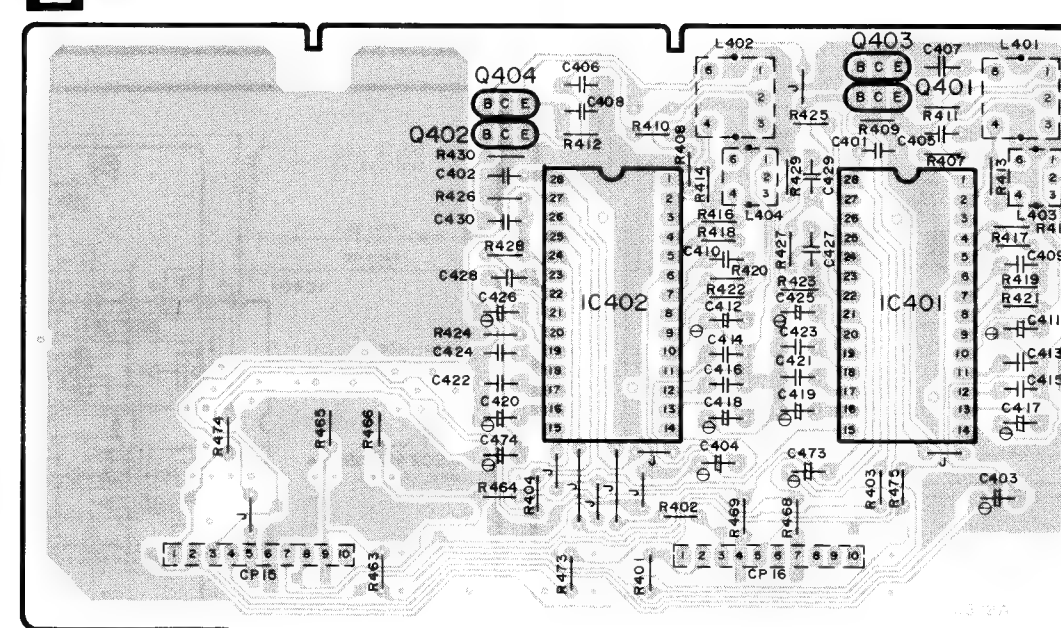
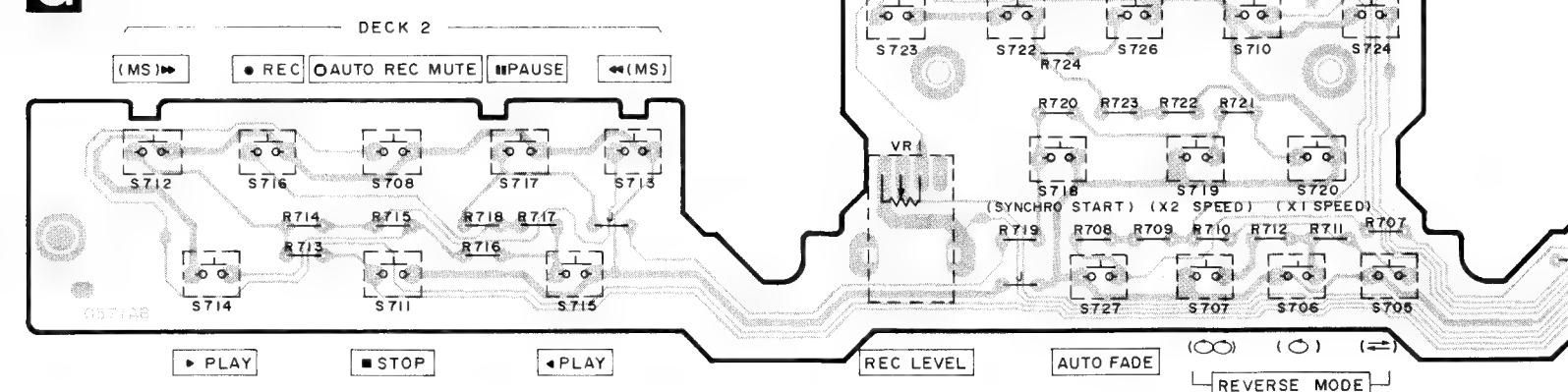
				M5218L 8 Pin 	DN6851A 3 Pin
M50963-227SP 64 Pin AN7384-B 16 Pin TEA0665 28 Pin	UPC1297CA 18 Pin AN7351K 42 Pin HD404302SA02 42 Pin	2SD1450RSTA, 2SB1030RSTTA 	2SB1357EFTA, 2SD2037EFTA 	2SB621ARSTA, 2SD592AQRSTA 	DTC114ESTP
2SJ164PQRTA 	2SB1240QRTV6 	MA4062LTA, MA4240H, MA4082MTA, MA4056MTA 	MA167TA, 1SR35200TB, MA165TA, MA700TA, 1SS133 	MSA1048ABCTA, MSC2458ABCTA 	

PRINTED CIRCUIT BOARDS

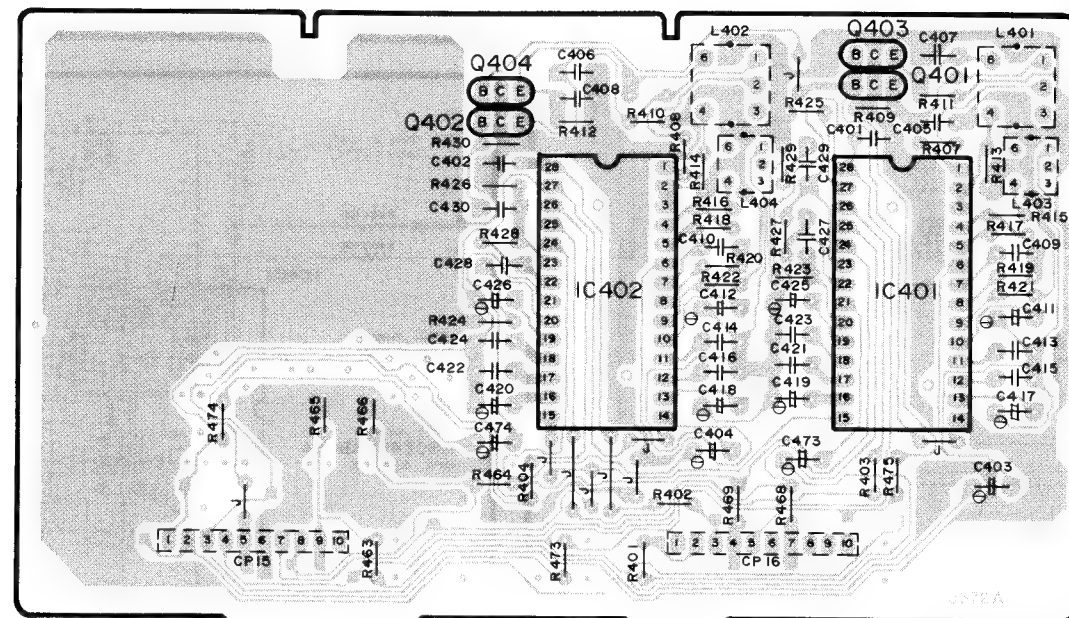
A
B
C
D
E
F
G



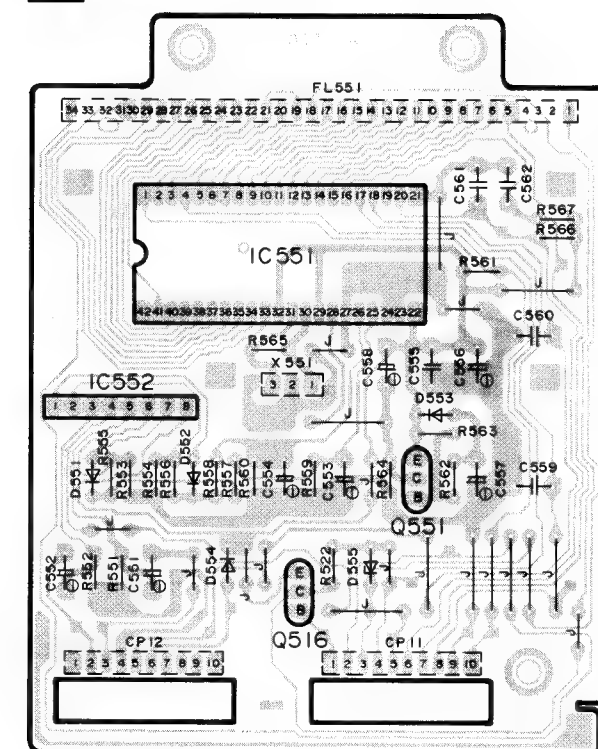
Power Source For (GC) area.

**B MECHANISM (DECK 1) P.C.B.****C MECHANISM (DECK 2) P.C.B.****D POWER SWITCH P.C.B.****E DOLBY NR P.C.B.****G OPERATION P.C.B.**

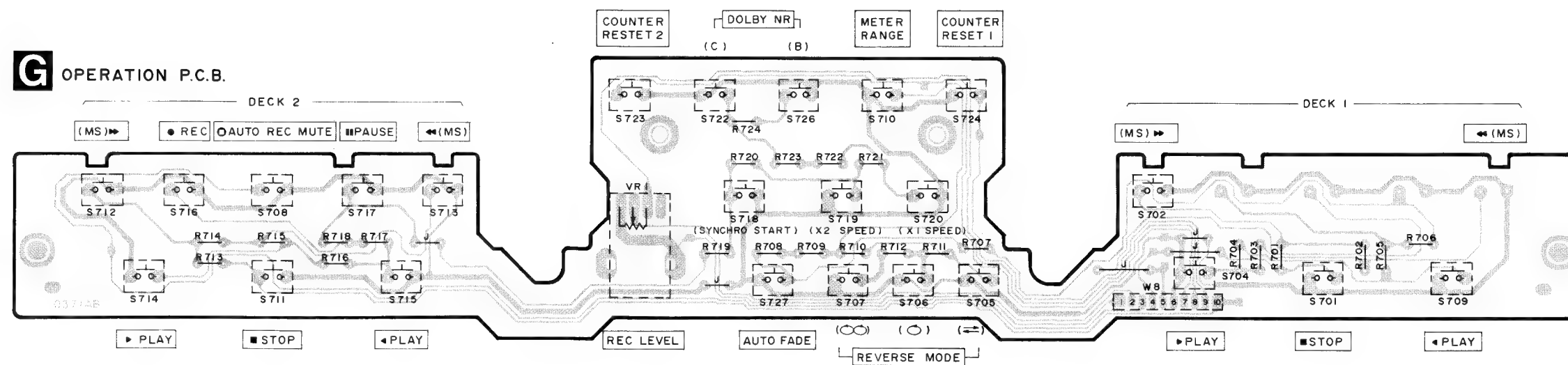
E DOLBY NR P.C.B.



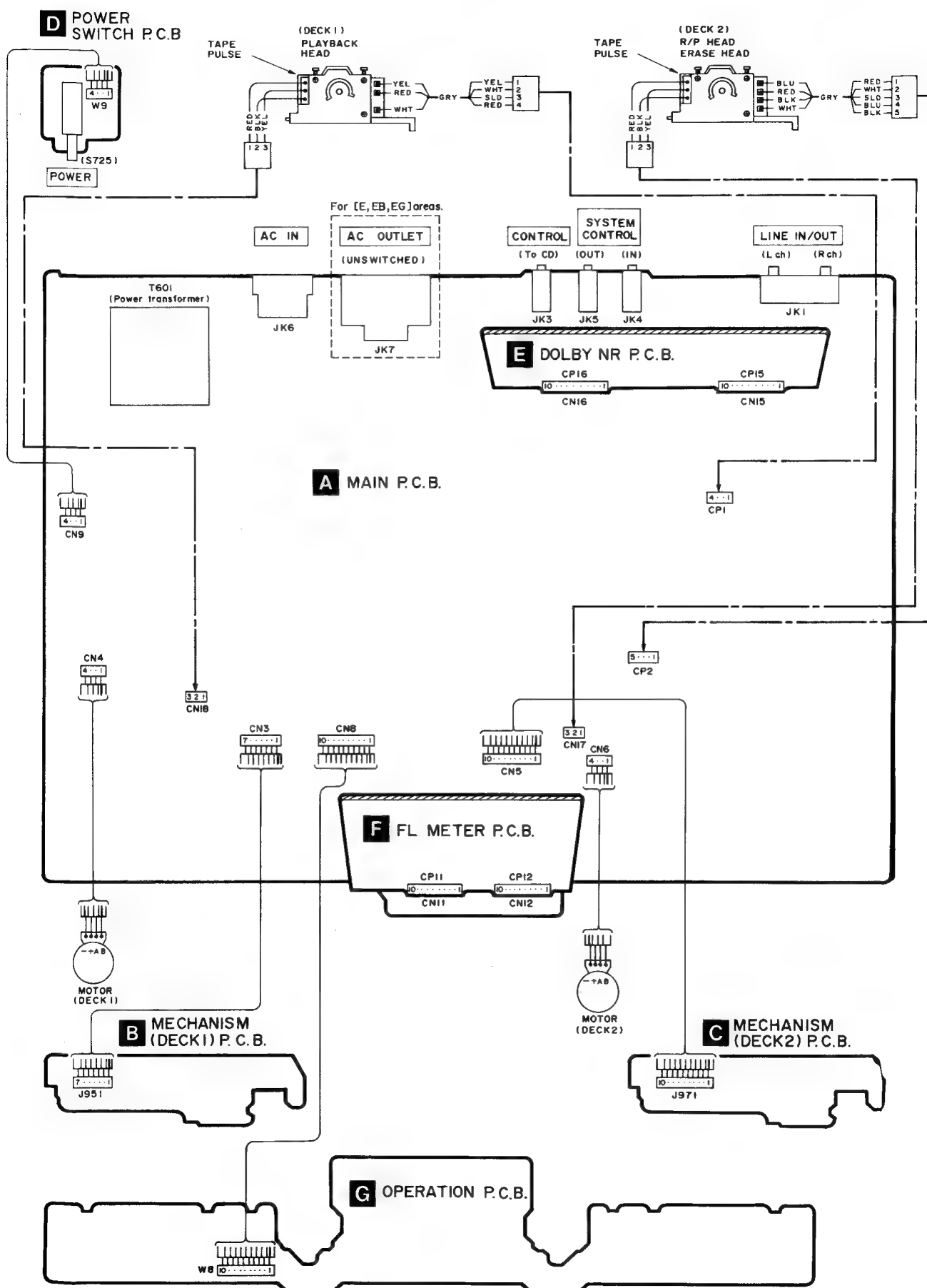
F FL METER P.C.B.



G OPERATION P.C.B.



WIRING CONNECTION DIAGRAM



REPLACEMENT PARTS LIST

Notes : * Important safety notice:

Components identified by Δ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

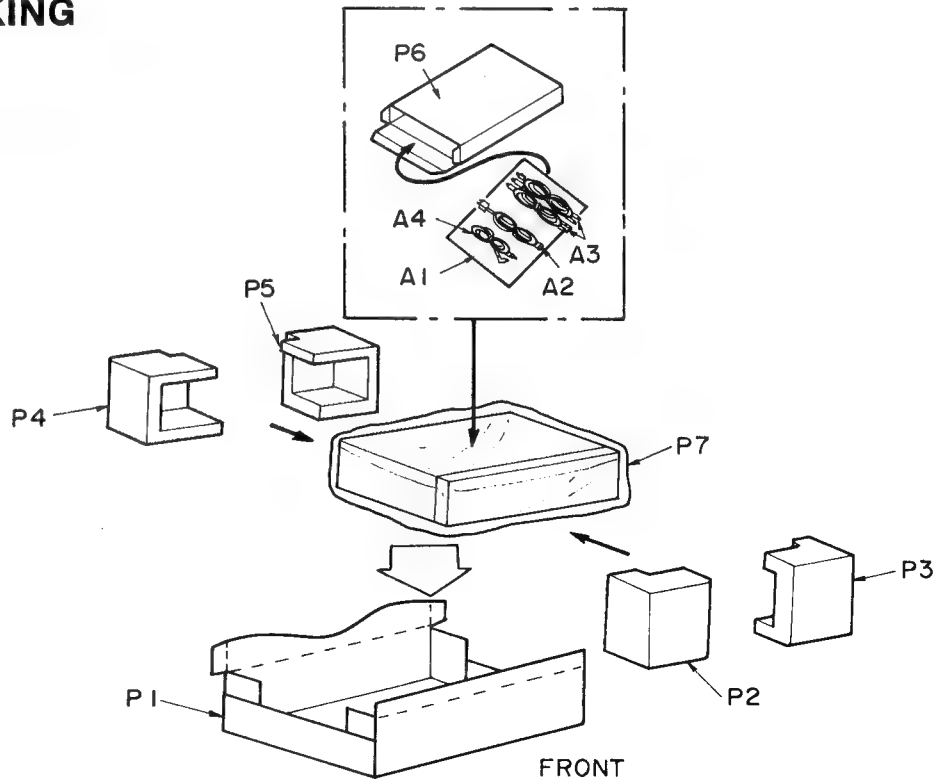
* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.) Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)		Q918	MSA1048ABCTA	TRANSISTOR	
				Q919	DTC114ESTP	TRANSISTOR	
				Q920	2SB1240QRTV6	TRANSISTOR	Δ
IC1	AN7384-B	ELECTRIC VOLUME		Q921, 922	DTC114ESTP	TRANSISTOR	
IC2	AN7351K	PLAYBACK/REC AMP		Q928	DTA114ESTP	TRANSISTOR	
IC7	M5218L	REC LEVEL CONTROL		Q929	MSC2458ABCTA	TRANSISTOR	
IC301	UPC1297CA	DOLBY HX PRO		Q930	DTA114ESTP	TRANSISTOR	
IC401, 402	TEA0665	DOLBY B/C NR		Q931	DTC114ESTP	TRANSISTOR	
IC551	HD404302SA02	MICROCOMPUTER; FL METER		Q932	MSC2458ABCTA	TRANSISTOR	
IC552	M5218L	BUFFER AMP		Q933	DTA114ESTP	TRANSISTOR	
IC802	M5218L	MUSIC SELECTOR AMP		Q934	DTC114ESTP	TRANSISTOR	
IC901	M50963-227SP	MICROCOMPUTER; MECHANICAL				DIODE(S)	
IC951	DN6851A	HALL					
IC971	DN6851A	HALL					
		TRANSISTOR(S)		D1, 2	MA167TA	DIODE	
				D105	MA165TA	DIODE	
				D311, 312	MA165TA	DIODE	
Q1-4	2SJ164PQRTA	TRANSISTOR		D313	MA4082MTA	DIODE	
Q5-8	MSA1048ABCTA	TRANSISTOR		D551-554	MA165TA	DIODE	
Q9-14	MSC2458ABCTA	TRANSISTOR		D555	MA4056MTA	DIODE	
Q301, 302	MSC2458ABCTA	TRANSISTOR		D601-606	1SR35200TB	DIODE	Δ
Q303	2SB621ARSTA	TRANSISTOR		D607, 608	MA4082MTA	DIODE	
Q304	2SD592AQRSTA	TRANSISTOR		D609	MA4240H	DIODE	
Q401-404	MSC2458ABCTA	TRANSISTOR		D610	MA4062LTA	DIODE	
Q516	DTA114ESTP	TRANSISTOR		D611	1SR35200TB	DIODE	Δ
Q551	MSA1048ABCTA	TRANSISTOR		D612	MA165TA	DIODE	
Q601	MSA1048ABCTA	TRANSISTOR	Δ	D813	MA165TA	DIODE	
Q603	MSC2458ABCTA	TRANSISTOR	Δ	D816	MA165TA	DIODE	
Q604	2SD2037EFTA	TRANSISTOR		D902-907	MA165TA	DIODE	
Q605	2SB1357EFTA	TRANSISTOR		D908	1SR35200TB	DIODE	
Q606	2SD2037EFTA	TRANSISTOR		D909	MA165TA	DIODE	
Q607	2SB621ARSTA	TRANSISTOR		D910	MA700TA	DIODE	
Q608	2SB1357EFTA	TRANSISTOR		D911, 912	MA165TA	DIODE	Δ
Q816	MSC2458ABCTA	TRANSISTOR		D917	MA700TA	DIODE	
Q902, 903	DTA114ESTP	TRANSISTOR		D919	MA165TA	DIODE	
Q904	2SB1030RSTTA	TRANSISTOR		D951	1SS133	DIODE	
Q905	MSC2458ABCTA	TRANSISTOR		D971	1SS133	DIODE	
Q906	DTC114ESTP	TRANSISTOR				I. C. PROTECTOR(S)	
Q908, 909	DTA114ESTP	TRANSISTOR					
Q910	DTC114ESTP	TRANSISTOR		ICP1	SRUN10T	I. C. PROTECTOR	(EB, GN)
Q911	MSA1048ABCTA	TRANSISTOR				VARIABLE RESISTOR(S)	
Q912	2SB1240QRTV6	TRANSISTOR	Δ				
Q913	DTC114ESTP	TRANSISTOR		VR1	EVJ02FF01B15	REC LEVEL CONTROL	
Q914	2SB1030RSTTA	TRANSISTOR	Δ	VR3-6	EVNDXAA00B24	PLAYBACK GAIN ADJ.	
Q915	DTC114ESTP	TRANSISTOR		VR7, 8	EVNDXAA00B14	OVERALL GAIN ADJ.	
Q916	2SB1030RSTTA	TRANSISTOR	Δ				
Q917	DTC114ESTP	TRANSISTOR					

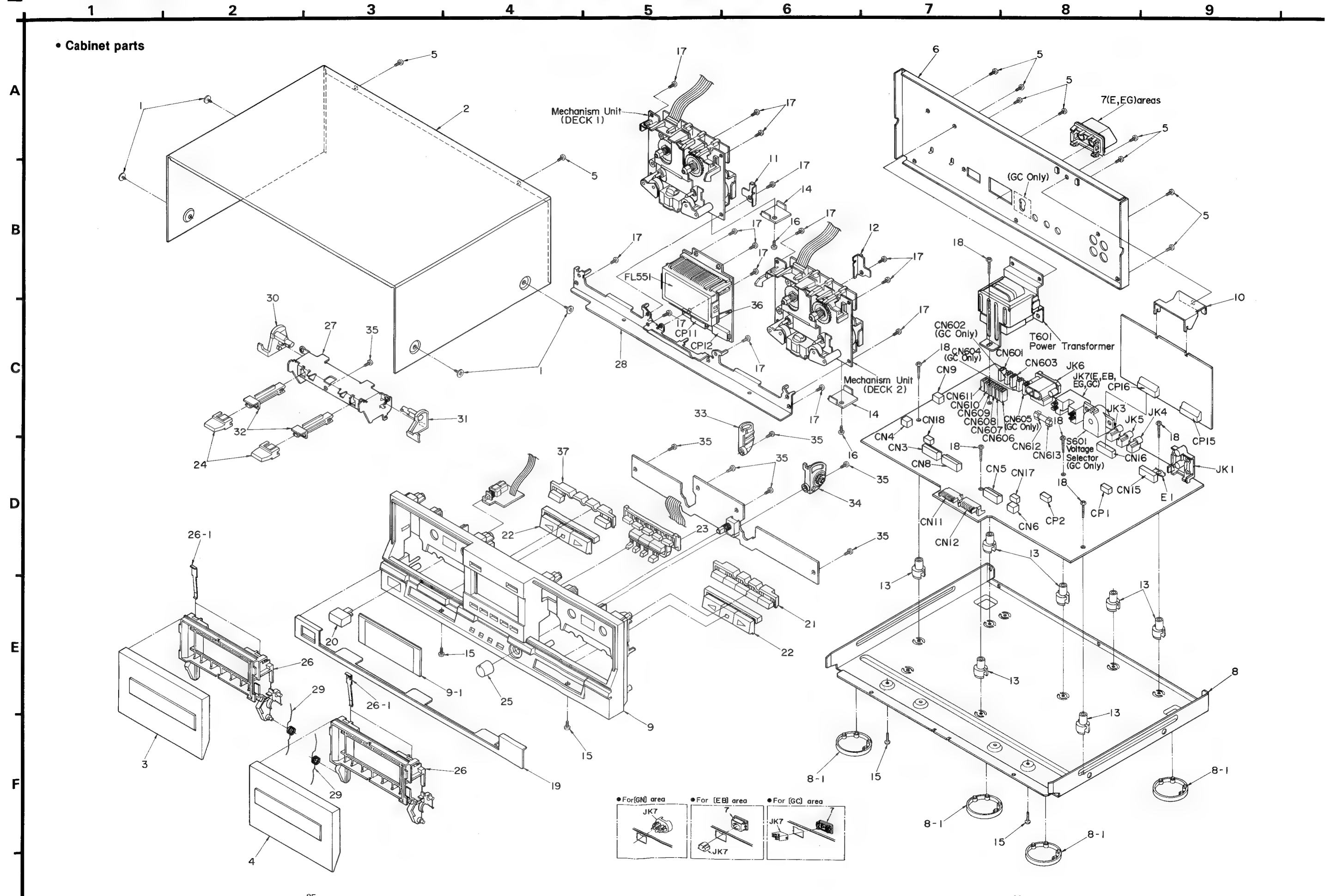
Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
VR301	EVNDXAA00B14	ERASE CURRENT ADJ.		S715	EVQ21405R	R PLAYBACK (DECK2)	
VR302, 303	EVNDXAA00B14	OVERALL FREQUENCY ADJ.		S716	EVQ21405R	REC (DECK2)	
VR901-903	EVNDXAA00BS3	TAPE SPEED ADJ.		S717	EVQ21405R	PAUSE (DECK2)	
				S718	EVQ21405R	SYNCHRO START	
		COMPONENT COMBINATION (S)		S719	EVQ21405R	TAPE EDIT SPEED (X2)	
				S720	EVQ21405R	TAPE EDIT SPEED (X1)	
Z901	EXBF7E562JYV	COMPONENT COMBINATION		S722	EVQ21405R	DOLBY C NR	
				S723	EVQ21405R	COUNTER RESET 2	
		COIL (S)		S724	EVQ21405R	COUNTER RESET 1	
				S725	SSH1159	POWER	△
L1, 2	SLQX303-1KT	COIL		S726	EVQ21405R	DOLBY B NR	
L3, 4	SLQX272-1YT	COIL		S727	EVQ21405R	AUTO FADE	
L301	SL09B4-K	COIL		S951	RSH1A89Z	MODE (DECK1)	
L302, 303	SL09B1-K	COIL		S952	RSH1A90Z	HALF (DECK1)	
L401, 402	QLM9Z10K	COIL		S953	RSH1A90Z	ATS (DECK1)	
L403, 404	SLM1B8-K	COIL		S971	RSH1A89Z	MODE (DECK2)	
				S972	RSH1A90Z	HALF (DECK2)	
		TRANSFORMER (S)		S973	RSH1A90Z	R REC INH (DECK2)	
				S974	RSH1A90Z	F. REC INH (DECK2)	
T601	RTPIK4B005-V	POWER TRANSFORMER	(EB, GN) △	S975	RSH1A90Z	ATS (DECK2)	
T601	RTPIK4E005-V	POWER TRANSFORMER	(E, EG) △	S976	RSH1A90Z	ATS (DECK2)	
T601	RTPIK4E006-V	POWER TRANSFORMER	(GC) △				
						CONNECTOR(S) AND SOCKET(S)	
		OSCILLATOR(S)		CN3	SJSD0705	CONNECTOR (7P)	
				CN4	RJS1A1704	CONNECTOR (4P)	
X551	EF0GC4004T4	CERAMIC FILTER		CN5	SJSD1005	CONNECTOR (10P)	
X901	EF0GC4004T4	CERAMIC FILTER		CN6	RJS1A1704	CONNECTOR (4P)	
				CN8	SJSD1005	CONNECTOR (10P)	
		DISPLAY TUBE		CN9	RJS1A1704	CONNECTOR (4P)	
				CN11, 12	RJU003K010M1	SOCKET (10P)	
FL551	RSL0027-F	DISPLAY TUBE		CN15, 16	SJS51078JQ	SOCKET (10P)	
				CN17, 18	SJTD313	CONNECTOR (3P)	
		FUSE (S)		CN601	RJS1A1101	SOCKET (1P)	
				CN602	RJS1A1101	SOCKET (1P)	(GC)
F601	XB42C20TB0	FUSE	(E, EG) △	CN603	RJS1A1101	SOCKET (1P)	
				CN604, 605	RJS1A1101	SOCKET (1P)	(GC)
		SWITCH(ES)		CN606-611	RJS1A1101	SOCKET (1P)	
				CN612, 613	EYF52BC	FUSE HOLDER	(E, EG)
S601	SSR187-1	VOLTAGE SELECTOR	(GC) △	CP1	SJTD413	CONNECTOR (4P)	
S701	EVQ21405R	STOP (DECK1)		CP2	SJTD513	CONNECTOR (5P)	
S702	EVQ21405R	F. F. (DECK1)		CP11, 12	RJT003K010M1	CONNECTOR (10P)	
S703	EVQ21405R	REW. (DECK1)		CP15, 16	SJT31045JQ	CONNECTOR (10P)	
S704	EVQ21405R	F. PLAYBACK (DECK1)					
S705-707	EVQ21405R	REVERSE MODE				GND PART(S)	
S708	EVQ21405R	AUTO REC MUTE (DECK2)					
S709	EVQ21405R	R. PLAYBACK (DECK1)		E1	SNE1004-1	GND PLATE	
S710	EVQ21405R	METER RANGE					
S711	EVQ21405R	STOP (DECK2)				JACK(S)	
S712	EVQ21405R	F. F. (DECK2)					
S713	EVQ21405R	REW. (DECK2)		JK1	SJF3069-2N	TERMINAL BOARD	
S714	EVQ21405R	F. PLAYBACK (DECK2)		JK3-5	RJ33TD1	M3 JACK	

[illegible]

■ PACKING



■ EXPLODED VIEW



REPLACEMENT PARTS LIST

Notes : * Important safety notice:

Components identified by \triangle mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.) Parts without these indications can be used for all areas.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS		36	RMN0049	FL HOLDER	
				37	RGU0384C	BUTTON, OPERATION(1)	
						PACKING MATERIAL	
1	RHD30007	SCREW		P1	RPG0464	CARTON BOX	
2	RKM0024-2K	CABINET		P2	RPN0383A	PAD (A)	
3	RYF0077A-K	CASSETTE LID (DECK1)		P3	RPN0383B	PAD (B)	
4	RYF0078A-K	CASSETTE LID (DECK2)		P4	RPN0383C	PAD (C)	
5	XTBS3+8JFZ1	SCREW		P5	RPN0383D	PAD (D)	
6	RGR0014D-B	REAR PANEL	(EB)	P6	SPSD152	ACCESSORIES BOX	
6	RGR0014E-B	REAR PANEL	(E)	P7	SPP756	PROTECTION COVER	
6	RGR0014E-F	REAR PANEL	(EG)			ACCESSORIES	
6	RGR0014F-A	REAR PANEL	(GC)				
6	RGR0014G-A	REAR PANEL	(GN)				
7	RJS1A4802-A	AC OUTLET COVER	(EB)	A1	RQF0547	INSTRUCTION MANUAL UNIT	(EB)
7	RJS1A4902-A	AC OUTLET COVER	(E, EG)	A1	RQF0548	INSTRUCTION MANUAL UNIT	(E)
7	SJS9330A	AC OUTLET COVER	(GC)	A1	RQF0549	INSTRUCTION MANUAL UNIT	(EG)
8	RFKJSX301E-K	BOTTOM BOARD ASS'Y		A1	RQF0623	INSTRUCTION MANUAL UNIT	(GC)
8-1	RKA0011	FOOT		A1	RQF0624	INSTRUCTION MANUAL UNIT	(GN)
9	RFKNSX501E-K	FRONT GRILLE ASS'Y		A1-1	RFKSSX501E-K	INSTRUCTION MANUAL ASS'Y	(E)
9-1	RKW0103	TRANSPARENT PLATE		A1-1	RQT0436-G	INSTRUCTION MANUAL	(GC)
10	RMA0100	ANGLE		A1-1	RQT0438-B	INSTRUCTION MANUAL	(EB, GN)
11	RMA0113	DAMPER ANGLE (L)		A1-1	RQT0439-D	INSTRUCTION MANUAL	(EG)
12	RMA0114	DAMPER ANGLE (R)		A1-2	SQX7186	WARRANTY CARD	(GN)
13	SHE187-2	HOLDER		A1-2	RQA0013	WARRANTY CARD	(E, EB, EG, GC)
14	SMNM17	BRACKET		A1-3	RQCB0169	SERVICENTER LIST	
15	XTBS3+10JFZ1	SCREW		A2	RJA0004	POWER CORD	(GC) \triangle
16	XTB26+4FFZ	SCREW		A2	SFDAC05E03	POWER CORD	(E, EG) \triangle
17	XTB3+10JFZ	SCREW		A2	SJA173	POWER CORD	(GN) \triangle
18	XTB3+20JFZ	SCREW		A2	SJA188	POWER CORD	(EB) \triangle
19	RG00043	FRONT PANEL		A3	SJP2249-3	STEREO CONNECTION CABLE	
20	RGU0030	BUTTON, POWER		A4	SJP2257T	L-TYPE CABLE	
21	RGU0384A	BUTTON, OPERATION (2)					
22	RGU0384B	BUTTON, OPERATION					
23	RGU0386	BUTTON, COUNTER					
24	RGU0387	BUTTON, EJECT					
25	RCW0080	KNOB, REC VOLUME					
26	RKF0020A-3	CASSETTE HOLDER					
26-1	QBP2006A	SPRING, TAPE PRESSURE					
27	RMA0158	EJECT ANGLE					
28	RMA0159-1	MECHANISM ANGLE					
29	RME0026	SPRING					
30	RML0041	EJECT LEVER (L)					
31	RML0042	EJECT LEVER (R)					
32	RMM0041	EJECT ROD					
33	FMRO153	DAMPER GEAR ASS'Y (L)					
34	FMRO154	DAMPER GEAR ASS'Y (R)					
35	XTBS26+8J	SCREW					

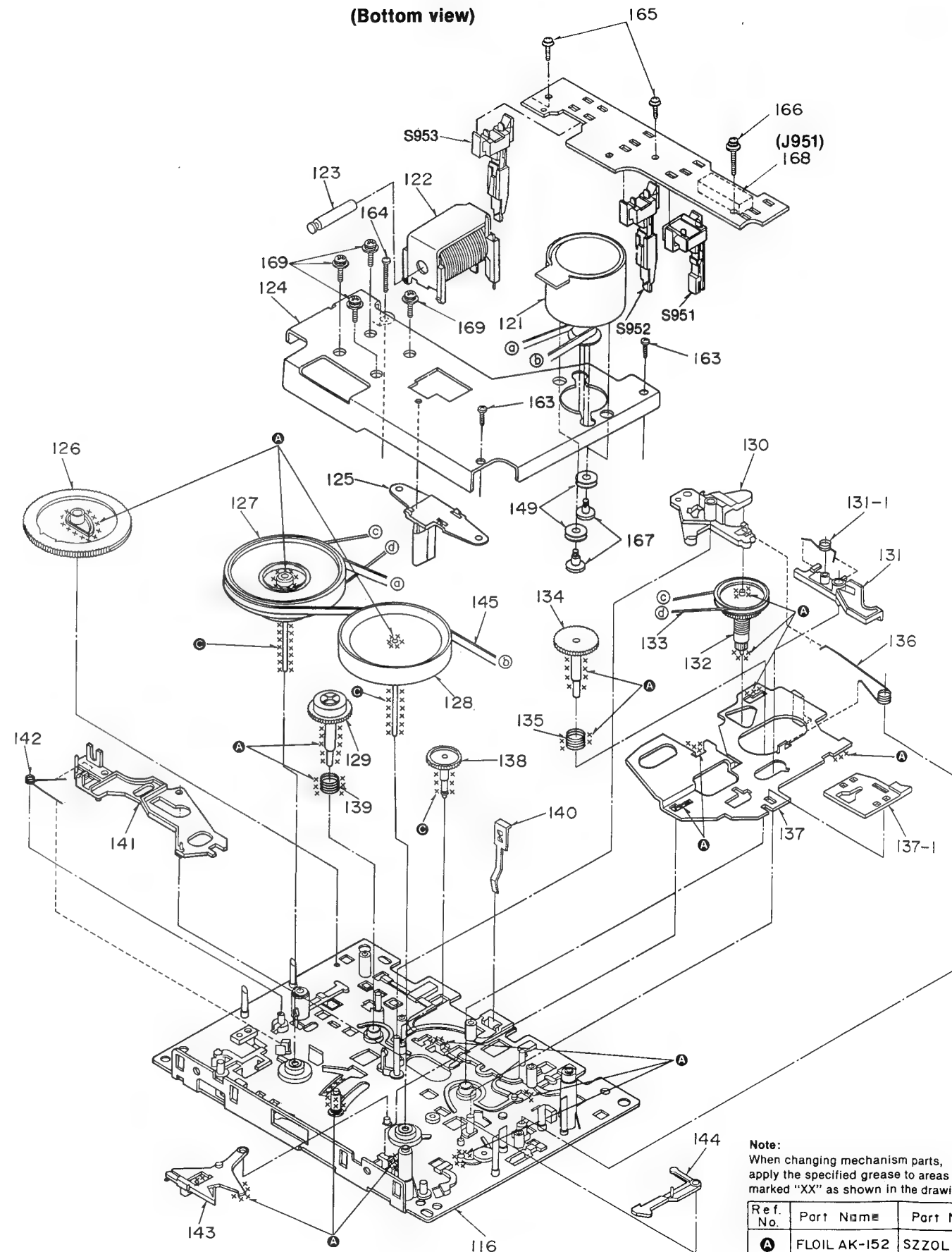
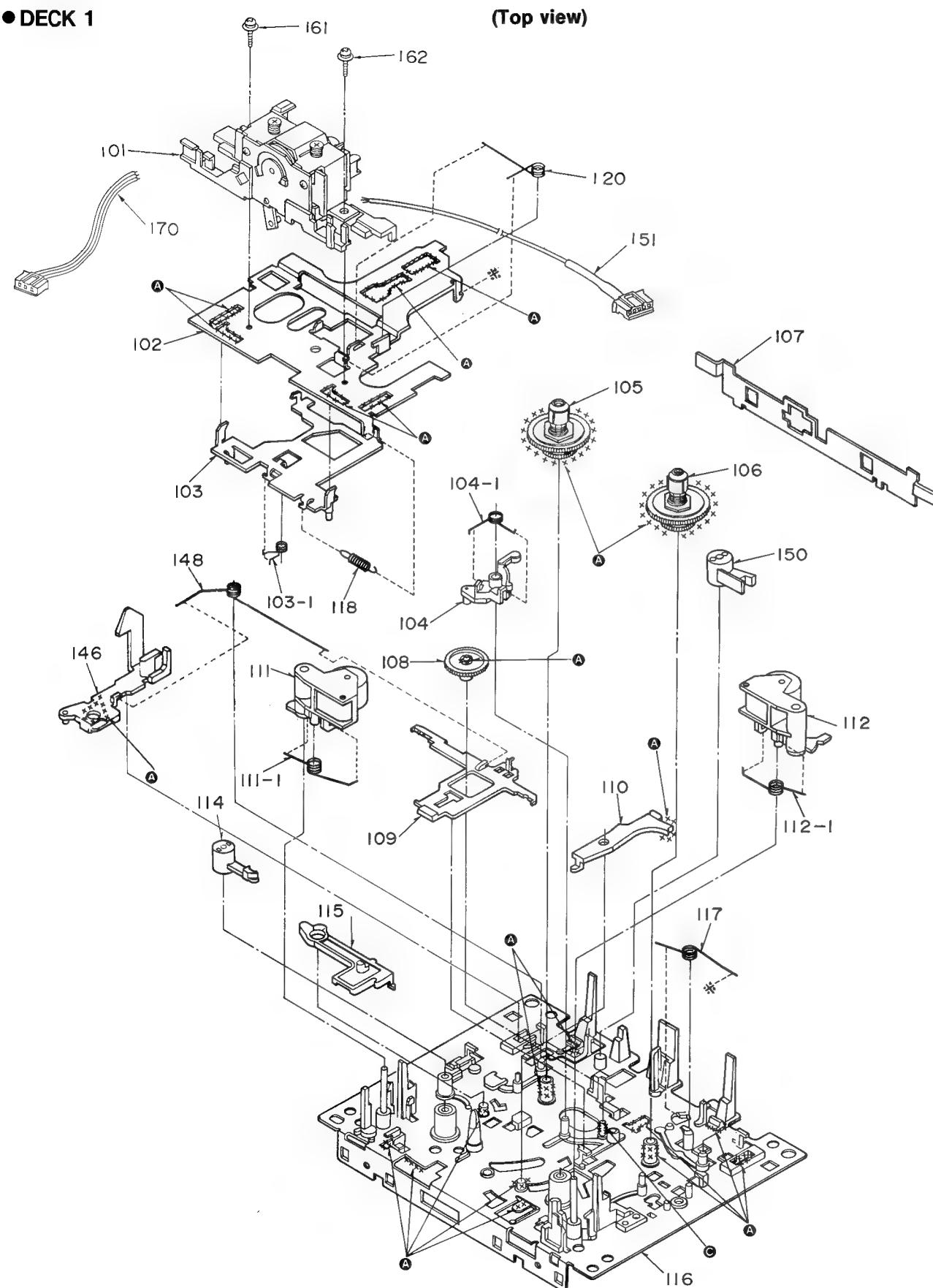
Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		MECHANISM PARTS LIST		145	RDV108ZA	CAPSTAN BELT	
				146	RUB5072C	EJECT ROD (L)	
				148	RUW144ZA	SPRING	
DECK1				149	RHG3032Z	RUBBER CUSHION	
101	RXQ0062	HEAD BLOCK (PLAYBACK)		150	RNL180ZA	DAMPER ARM	
102	RUA7932D	HEAD BASE		151	REX0132	LEAD WIRE BLOCK(4P)	
103	RZLAR300	ROD		161	XTW2+6L	SCREW	
103-1	RUW143Z	SPRING		162	XTW2+8L	SCREW	
104	1UB0089ZA	ARM		163	XTN26+7J	SCREW	
104-1	RUW148ZA	SPRING		164	XTN26+16F	SCREW	
105	1DM0018ZA	REEL TABLE (R)		165	XTW2+8S	SCREW	
106	1DM0017ZA	REEL TABLE (F)		166	XYC2+JF16	SCREW	
107	RUB502Z	LEVER		167	QH1303	SCREW	
108	RDG5772Z	GEAR		168	RJS7T7ZA	CONNECTOR (7P), J951	
109	RUB508ZA	BRAKE ROD		169	RHD26003	SCREW	
110	RUB506Z	LEVER		170	REX0145	LEAD WIRE BLOCK(3P)	
111	1UB0088ZA	ARM (R)					
111-1	RUW141Z	SPRING					
112	1UB0087ZA	ARM (F)					
112-1	RUW140Z	SPRING					
114	RNL1Z	DAMPER ARM					
115	RUB503Z	MAIN LEVER					
116	RZUSX980	CHASSIS					
117	RUW142ZA	SPRING					
118	RUD105Z	SPRING					
120	RUW139ZA	SPRING					
121	RFM133ZA	DC MOTOR					
122	1UE0015ZA	PLUNGER					
123	RUB428Z	MOVING IRON CORE					
124	RUL1030XA	ANGLE					
125	RMD5014Z	ANGLE					
126	RDG5927ZA	GEAR					
127	1DW00532B	FLYWHEEL (F)					
128	1DW00542B	FLYWHEEL (R)					
129	1DG0006ZA	REEL TABLE GEAR					
130	RUB513Z	ARM					
131	1UB0091ZA	LEVER					
131-1	RUW146ZA	SPRING					
132	1DR0011ZA	MAIN PULLEY					
133	RDV90ZB	BELT					
134	RDG5769ZA	REEL TABLE GEAR					
135	RUQ10Z	SPRING					
136	RUW145ZA	SPRING					
137	1UB0090ZA	ROD					
137-1	RUB512Z	ROD					
138	RDG5773ZA	GEAR					
139	RUQ30Z	SPRING					
140	RUS609Z	TAPE PRESSURE SPRING					
141	RUB514Z	LEVER					
142	RUW147ZA	SPRING					
143	RUB515Z	LEVER					
144	RUB509ZA	LEVER					

EXPLODED VIEWS

• Mechanical parts

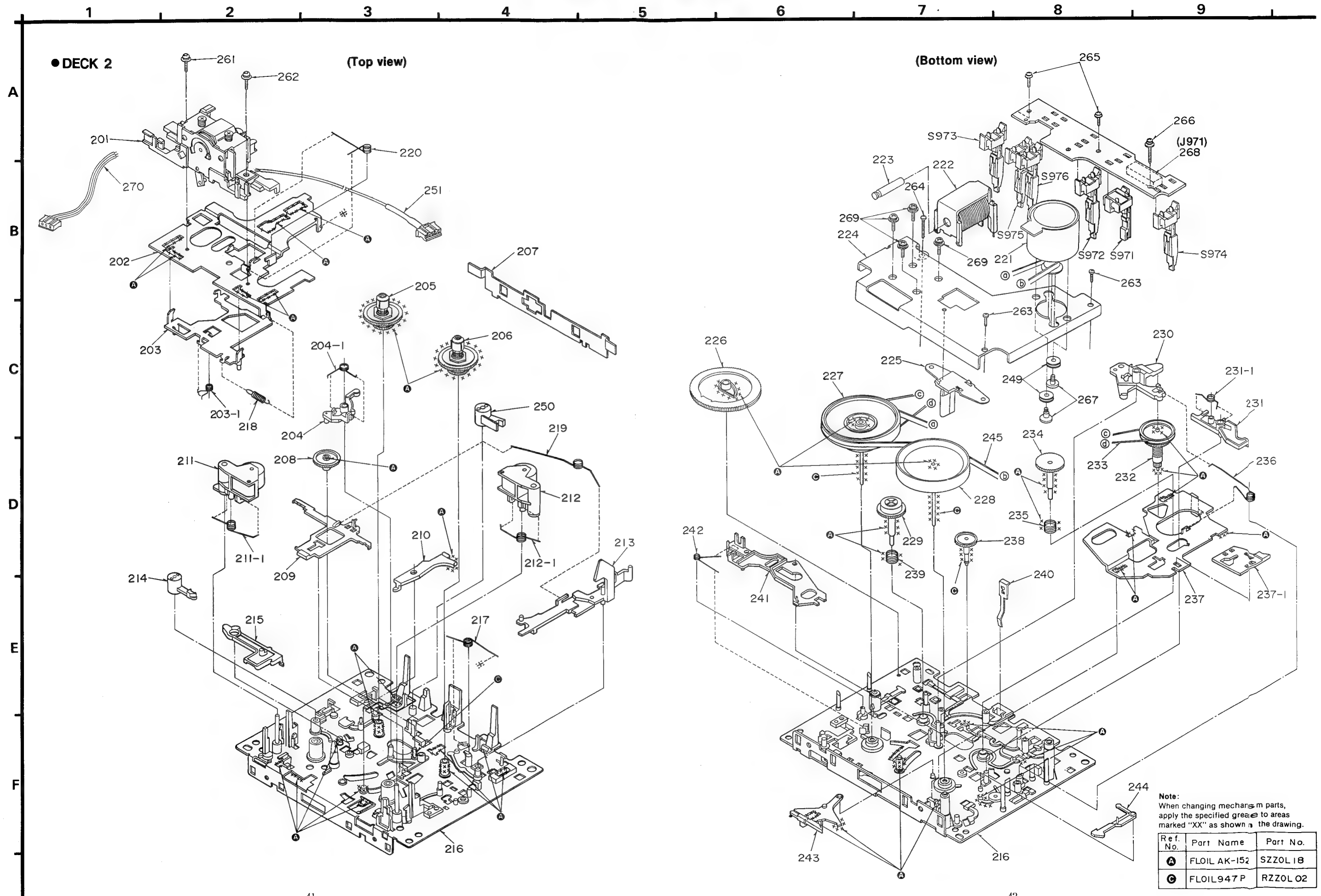
• DECK 1

A
B
C
D
E
F



Note:
When changing mechanism parts,
apply the specified grease to areas
marked "XX" as shown in the drawing.

Ref. No.	Part Name	Part No.
A	FLOIL AK-152	SZZOL 18
C	FLOIL 947 P	RZZOL 02



REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		MECHANISM PARTS LIST		243	RUB515Z	LEVER	
				244	RUB509ZA	LEVER	
				245	RDV108ZA	CAPSTAN BELT	
DECK2				249	RHG3032Z	RUBBER CUSHION	
201	RXQ0008	HEAD BLOCK (REC./PLAYBACK)		250	RNL97ZA	DAMPER ARM	
202	RJA793Z	HEAD BASE		251	REX0133	LEAD WIRE BLOCK(5P)	
203	RZLAR300	ROD		261	XTW2+6L	SCREW	
203-1	RJW143Z	SPRING		262	XTW2+8L	SCREW	
204	IUB0089ZA	ARM		263	XTN26+7J	SCREW	
204-1	RJW148ZA	SPRING		264	XTN26+16F	SCREW	
205	1DM0018ZA	REEL TABLE (R)		265	XTW2+8S	SCREW	
206	1DM0017ZA	REEL TABLE (F)		266	XYC2+JF16	SCREW	
207	RUB502Z	LEVER		267	QH01303	SCREW	
208	RDG5772Z	GEAR		268	RJS10T7ZA	CONNECTOR (10P), J971	
209	RUB508ZA	BRAKE ROD		269	RHD26003	SCREW	
210	RUB506Z	LEVER		270	REX0145	LEAD WIRE BLOCK(3P)	
211	IUB0088ZA	ARM (R)					
211-1	RJW141Z	SPRING					
212	IUB0087ZA	ARM (F)					
212-1	RJW140Z	SPRING					
213	RUB5412B	EJECT ROD (R)					
214	RNL1Z	DAMPER ARM					
215	RUB503Z	MAIN LEVER					
216	RZUSX980	CHASSIS					
217	RJW142ZA	SPRING					
218	RUD105Z	SPRING					
219	RJW167ZA	SPRING					
220	RJW139ZA	SPRING					
221	RFM133ZA	DC MOTOR					
222	IUE0015ZA	PLUNGER					
223	RUB428Z	MOVING IRON CORE					
224	RUL1030XA	ANGLE					
225	RMD5014Z	ANGLE					
226	RDG5927ZA	GEAR					
227	1DW0053ZB	FLYWHEEL (F)					
228	1DW0054ZB	FLYWHEEL (R)					
229	1DG0006ZA	REEL TABLE GEAR					
230	RUB513Z	ARM					
231	IUB0091ZA	LEVER					
231-1	RJW146ZA	SPRING					
232	1DR0011ZA	MAIN PULLEY					
233	RDV902B	BELT					
234	RDG5769ZA	REEL TABLE GEAR					
235	RJQ10Z	SPRING					
236	RJW145ZA	SPRING					
237	IUB0090ZA	ROD					
237-1	RUB512Z	ROD					
238	RDG5773ZA	GEAR					
239	RJQ30Z	SPRING					
240	RUS609Z	TAPE PRESSURE SPRING					
241	RUB514Z	LEVER					
242	RJW147ZA	SPRING					

RESISTORS & CAPACITORS

Notes : * Capacity value are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
 * Resistance values are in ohms, unless specified otherwise, 1K=1,000(OHM) , 1M=1,000k(OHM)

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
		RESISTORS	R401-404	ERDS2TJ101T	1/4W 100	R632	ERD2FCVJ5R6T	1/4W 5.6 (EB, GN) △
			R407, 408	ERDS2TJ242T	1/4W 2.4K	R701	ERDS2TJ821T	1/4W 820
			R409-412	ERDS2TJ684T	1/4W 680K	R702	ERDS2TJ102T	1/4W 1K
R1, 2	ERDS2TJ394T	1/4W 390K	R413, 414	ERDS2TJ562T	1/4W 5.6K	R703	ERDS2TJ122T	1/4W 1.2K
R3, 4	ERDS2TJ393T	1/4W 39K	R415, 416	ERDS2TJ102T	1/4W 1K	R704	ERDS2TJ152T	1/4W 1.5K
R5, 6	ERDS2TJ183T	1/4W 18K	R417, 418	ERDS2TJ332T	1/4W 3.3K	R705	ERDS2TJ182T	1/4W 1.8K
R7, 8	ERDS2TJ225T	1/4W 2.2M	R419, 420	ERDS2TJ333T	1/4W 33K	R706	ERDS2TJ222T	1/4W 2.2K
R9, 10	ERDS2TJ332T	1/4W 3.3K	R421-424	ERDS2TJ823T	1/4W 82K	R707	ERDS2TJ332T	1/4W 3.3K
R11, 12	ERDS2TJ561T	1/4W 560	R425, 426	ERDS2TJ683T	1/4W 68K	R708	ERDS2TJ472T	1/4W 4.7K
R13, 14	ERDS2TJ332T	1/4W 3.3K	R427, 428	ERDS2TJ222T	1/4W 2.2K	R709	ERDS2TJ682T	1/4W 6.8K
R19, 20	ERDS2TJ101T	1/4W 100	R429, 430	ERDS2TJ512T	1/4W 5.1K	R710	ERDS2TJ123T	1/4W 12K
R21, 22	ERDS2TJ104T	1/4W 100K	R463, 464	ERDS2TJ122T	1/4W 1.2K	R711	ERDS2TJ223T	1/4W 22K
R23, 24	ERDS2TJ101T	1/4W 100	R465, 466	ERDS2TJ332T	1/4W 3.3K	R712	ERDS2TJ683T	1/4W 68K
R25, 26	ERDS2TJ225T	1/4W 2.2M	R468, 469	ERDS2TJ223T	1/4W 22K	R713	ERDS2TJ821T	1/4W 820
R27, 28	ERDS2TJ820T	1/4W 82	R473-475	ERDS2TJ472T	1/4W 4.7K	R714	ERDS2TJ102T	1/4W 1K
R29, 30	ERDS2TJ103T	1/4W 10K	R522	ERDS2TJ333T	1/4W 33K	R715	ERDS2TJ122T	1/4W 1.2K
R31, 32	ERDS2TJ273T	1/4W 27K	R551-556	ERDS2TJ473T	1/4W 47K	R716	ERDS2TJ152T	1/4W 1.5K
R33, 34	ERDS2TJ183T	1/4W 18K	R557, 558	ERDS2TJ220T	1/4W 22	R717	ERDS2TJ182T	1/4W 1.8K
R35, 36	ERDS2TJ474T	1/4W 470K	R559, 560	ERDS2TJ152T	1/4W 1.5K	R718	ERDS2TJ222T	1/4W 2.2K
R37, 38	ERDS2TJ272T	1/4W 2.7K	R561	ERDS2TJ102T	1/4W 1K	R719	ERDS2TJ332T	1/4W 3.3K
R43, 44	ERDS2TJ103T	1/4W 10K	R562	ERDS2TJ471T	1/4W 470	R720	ERDS2TJ472T	1/4W 4.7K
R45, 46	ERDS2TJ223T	1/4W 22K	R563, 564	ERDS2TJ103T	1/4W 10K	R721	ERDS2TJ682T	1/4W 6.8K
R47, 48	ERDS2TJ472T	1/4W 4.7K	R565	ERDS2TJ105T	1/4W 1M	R722	ERDS2TJ123T	1/4W 12K
R49, 50	ERDS2TJ102T	1/4W 1K	R566, 567	ERDS2TJ103T	1/4W 10K	R723	ERDS2TJ223T	1/4W 22K
R51, 52	ERDS2TJ470T	1/4W 47	R601	ERDS2TJ472T	1/4W 4.7K △	R724	ERDS2TJ683T	1/4W 68K
R53, 54	ERDS2TJ392T	1/4W 3.9K	R602	ERDS2TJ472T	1/4W 4.7K	R823, 824	ERDS2TJ472T	1/4W 4.7K
R55, 56	ERDS2TJ272T	1/4W 2.7K	R603	ERDS2TJ103T	1/4W 10K	R839	ERDS2TJ222T	1/4W 2.2K
R57, 58	ERDS2TJ103T	1/4W 10K	R604	ERDS2TJ472T	1/4W 4.7K △	R840	ERDS2TJ102T	1/4W 1K
R59, 60	ERDS2TJ562T	1/4W 5.6K	R605	ERDS1FVJ5R6T	1/2W 5.6 (E, EG, GC) △	R841	ERDS2TJ473T	1/4W 47K
R63, 64	ERDS2TJ472T	1/4W 4.7K				R842	ERDS2TJ333T	1/4W 33K
R65	ERDS2TJ392T	1/4W 3.9K	R605	ERD2FCVJ5R6T	1/4W 5.6 (EB, GN) △	R843	ERDS2TJ393T	1/4W 39K
R67	ERDS2TJ103T	1/4W 10K	R606	ERDS1FVJ3R3T	1/2W 3.3 △	R844	ERDS2TJ822T	1/4W 8.2K
R93	ERDS2TJ273T	1/4W 27K	R607, 608	ERDS2TJ102T	1/4W 1K	R845	ERDS2TJ823T	1/4W 82K
R94	ERDS2TJ123T	1/4W 12K	R611	ERDS1FVJ100T	1/2W 10 (E, EG, GC) △	R846	ERDS2TJ101T	1/4W 100
R129, 130	ERDS2TJ183T	1/4W 18K				R847	ERDS2TJ122T	1/4W 1.2K
R133, 134	ERDS2TJ562T	1/4W 5.6K	R611	ERD2FCVG100T	1/4W 10 (EB, GN) △	R852	ERDS1FVJ470T	1/2W 47 (E, EG, GC) △
R135, 136	ERDS2TJ822T	1/4W 8.2K	R612	ERDS1FVJ270T	1/2W 27 (E, EG, GC) △			
R137, 138	ERDS2TJ562T	1/4W 5.6K				R852	ERD2FCVG470T	1/4W 47 (EB, GN) △
R301	ERDS2TJ1R0T	1/4W 1.0	R612	ERD2FCVG270T	1/4W 27 (EB, GN) △	R903	ERDS2TJ393T	1/4W 39K
R302, 303	ERDS2TJ183T	1/4W 18K	R613	ERDS2TJ102T	1/4W 1K	R904, 905	ERDS2TJ222T	1/4W 2.2K
R304, 305	ERDS2TJ100T	1/4W 10	R614	ERDS2TJ222T	1/4W 2.2K △	R906	ERDS2TJ103T	1/4W 10K
R306	ERDS2TJ471T	1/4W 470	R615, 616	ERDS2TJ270T	1/4W 27	R907	ERDS2TJ563T	1/4W 56K
R307	ERDS2TJ222T	1/4W 2.2K	R617, 618	ERQ16NKR15E	1/6W 0.15 (EB, GN) △	R908-910	ERDS2TJ103T	1/4W 10K
R311, 312	ERDS2TJ101T	1/4W 100	R619-621	ERDS2TJ560T	1/4W 56	R911	ERDS2TJ392T	1/4W 3.9K
R313, 314	ERDS2TJ154T	1/4W 150K	R622	ERQ16NKR15E	1/6W 0.15 (EB, GN) △	R912, 913	ERDS2TJ272T	1/4W 2.7K
R315, 316	ERDS2TJ153T	1/4W 15K	R623	ERDS2TJ560T	1/4W 56	R914	ERDS2TJ152T	1/4W 1.5K
R319	ERDS2TJ102T	1/4W 1K	R624, 625	ERDS2TJ270T	1/4W 27	R915	ERDS2TJ473T	1/4W 47K
R321	ERDS2TJ102T	1/4W 1K	R632	ERDS1FVJ5R6T	1/2W 5.6 (E, EG, GC) △	R916	ERDS2TJ272T	1/4W 2.7K
R329	ERDS2TJ222T	1/4W 2.2K				R917, 918	ERDS2TJ103T	1/4W 10K

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
R919	ERDS2TJ471T	1/4W 470				C417-420	ECEA1HCR68B	50V 0.68U
R920-922	ERDS2TJ103T	1/4W 10K	C1-3	ECEA1HKO10B	50V 1U	C421, 422	ECQV1H224JZ3	50V 0.22U
R923	ERDS2TJ100T	1/4W 10	C5, 6	ECEA1CK220B	16V 22U	C423, 424	ECFR1C473JR	16V 0.047U
R924	ERDS2TJ103T	1/4W 10K	C7-10	ECBT1H561KB5	50V 560P	C425, 426	ECEA1CK100B	16V 10U
R925	ERDS2TJ223T	1/4W 22K	C11, 12	ECBT1H102KB5	50V 1000P	C427, 428	ECFR1C472JR	16V 4700P
R926	ERDS2TJ100T	1/4W 10	C13, 14	ECEA0JU101B	6.3V 100U	C429, 430	ECFR1C103JR	16V 0.01U
R927	ERDS2TJ223T	1/4W 22K	C15, 16	ECQB1H682JZ3	50V 6800P	C473, 474	ECEA1HKO10B	50V 1U
R928	ERDS2TJ273T	1/4W 27K	C17-20	ECEA1EK4R7B	25V 4.7U	C551, 552	ECEA1CK100B	16V 10U
R931	ERDS2TJ102T	1/4W 1K	C21	ECEA0JU101B	6.3V 100U	C553, 554	ECEA0JK101B	6.3V 100U
R932	ERDS2TJ392T	1/4W 3.9K	C25, 26	ECEA1HKO10B	50V 1U	C555	ECKR1H103ZF5	50V 0.01U
R933	ERDS2TJ472T	1/4W 4.7K	C27, 28	ECBT1H561KB5	50V 560P	C556	ECEA0JK101B	6.3V 100U
R934	ERDS2TJ105T	1/4W 1M	C29, 30	ECKD2H101KB	500V 100P	C557	ECEA1EK4R7B	25V 4.7U
R935	ERDS2TJ182T	1/4W 1.8K	C31, 32	ECCD1H181K	50V 180P	C558	ECEA1HKO10B	50V 1U
R938, 939	ERDS2TJ472T	1/4W 4.7K	C33, 34	ECEA1HCR47B	50V 0.47U	C559-562	ECKR1H103ZF5	50V 0.01U
R940	ERDS2TJ103T	1/4W 10K	C35, 36	ECFR1C472JR	16V 4700P	C601	ECKD2H682PE	500V 6800P △
R941	ERDS2TJ102T	1/4W 1K	C37, 38	ECFR1C223JR	16V 0.022U	C602, 603	ECEA1EU102B	25V 1000U △
R943	ERDS2TJ223T	1/4W 22K	C39, 40	ECFR1C103JR	16V 0.01U	C604, 605	ECKR1H103ZF5	50V 0.01U
R945	ERDS2TJ223T	1/4W 22K	C41, 42	ECFR1C223JR	16V 0.022U	C606, 607	ECEA1AU221B	10V 220U
R948	ERDS2TJ184T	1/4W 180K	C43, 44	ECFR1C103JR	16V 0.01U	C608, 609	ECKR1H103ZF5	50V 0.01U
R949	ERDS2TJ103T	1/4W 10K	C45, 46	ECBT1E103ZF5	25V 0.01U	C610, 611	ECEA0JU102B	6.3V 1000U
R950	ERDS2TJ222T	1/4W 2.2K	C49, 50	ECEA1CK100B	16V 10U	C612	ECEA1EU222E	25V 2200U △
R951	ERDS2TJ103T	1/4W 10K	C53, 54	ECFR1C273JR	16V 0.027U	C613	ECEA1HJ470B	50V 47U
R952	ERDS2TJ432	1/4W 4.3K	C55	ECBT1E103ZF5	25V 0.01U	C615	ECKR1H103ZF5	50V 0.01U
R953	ERDS2TJ103T	1/4W 10K	C57, 58	ECEA1AU470B	10V 47U	C801	ECEA1HKO10B	50V 1U
R954	ERDS2TJ223T	1/4W 22K △	C59, 60	ECBT1H4R7KC5	50V 4.7P	C802	ECCR1H470K5	50V 47P
R955	ERDS2TJ821T	1/4W 820	C64	ECEA1HNO10SB	50V 1U	C803	ECEA1CK100B	16V 10U
R956	ERDS2TJ223T	1/4W 22K △	C301	ECQP1153JZ	50V 0.015U	C804	ECFR1C822JR	16V 8200P
R957	ERDS2TJ821T	1/4W 820	C302	ECEA1EK4R7B	25V 4.7U	C901	ECEA0JU222B	6.3V 2200U
R958	ERDS2TJ223T	1/4W 22K △	C303	ECKR1H392KB5	50V 3900P	C903	ECEA1HKO10B	50V 1U
R959	ERDS2TJ821T	1/4W 820	C304, 305	ECFR1E222KAY	25V 2200P	C904	ECEA1EK4R7B	25V 4.7U
R960	ERDS2TJ153T	1/4W 15K	C306	ECFR1E682KAY	25V 6800P	C907	ECKR1H103ZF5	50V 0.01U
R961	ERDS2TJ561T	1/4W 560	C309	ECKR1H103ZF5	50V 0.01U	C912	ECKD1H122KB	50V 1200P
R962	ERDS2TJ103T	1/4W 10K	C310	ECKD1H472KB	50V 4700P	C915	ECFR1C473JR	16V 0.047U
R963	ERDS2TJ432	1/4W 4.3K	C311	ECEA1AU471B	10V 470U			
R964	ERDS2TJ184T	1/4W 180K	C313, 314	ECQB1H223JZ3	50V 0.022U			
R965	ERDS2TJ103T	1/4W 10K	C315, 316	ECKD2H821KB	500V 820P			
R966	ERDS2TJ223T	1/4W 22K △	C317, 318	ECKD2H121KB	500V 120P			
R967	ERDS2TJ821T	1/4W 820	C319, 320	ECQV1H473JZ3	50V 0.047U			
R968-970	ERDS2TJ472T	1/4W 4.7K	C321, 322	ECQB1H223JZ3	50V 0.022U			
R975, 976	ERDS2TJ331T	1/4W 330	C323, 324	ECQB1H103JZ3	50V 0.01U			
R977, 978	ERDS2TJ103T	1/4W 10K	C325, 326	ECKD1H122KB	50V 1200P			
R979	ERDS2TJ153T	1/4W 15K	C328	ECCD2H100K	500V 10P			
R980-985	ERDS2TJ393T	1/4W 39K	C331	ECBT1E103ZF5	25V 0.01U			
R986	ERDS2TJ103T	1/4W 10K	C332	ECEA1CK100B	16V 10U			
R990	ERDS2TJ100T	1/4W 10	C401, 402	ECBT1C222MR5	16V 2200P			
R991, 992	ERDS1FVJ1R0T	1/2W 1.0 △	C403, 404	ECEA1EK4R7B	25V 4.7U			
R994	ERDS2TJ102T	1/4W 1K	C405, 406	ECKD1H122KB	50V 1200P			
R995, 996	ERDS2TJ100T	1/4W 10	C407, 408	ECKD1H152KB	50V 1500P			
R997	ERDS2TJ102T	1/4W 1K	C409, 410	ECFR1C472JR	16V 4700P			
R998	ERDS2TJ100T	1/4W 10	C411, 412	ECEA1CK100B	16V 10U			
			C413, 414	ECFR1C473JR	16V 0.047U			
		CAPACITORS	C415, 416	ECQV1H224JZ3	50V 0.22U			

Cassette Deck

RS-X501

DEUTSCH

MESSUNGEN UND EINSTELL METHODEN

Meßinstrumente

- Elektronisches Voltmeter (EVM)
- Oszilloskop
- Digitaler Frequenzmesser
- Audiofrequenz-Oszillator
- Dämpfungswiderstand
- Gleichstrom-Voltmeter
- Widerstand (600Ω)

Tonkopf-Azimuteinstellung (Deck 1/2)

1. Spielen Sie auf dem Testband (QZZCFM) den Teil für die Azimuteinstellung (8kHz, -20dB) ab. Drehen Sie die Azimuteinstellschraube so lange, bis die Abgaben des L-K und R-K den Höchstwert erreichen, und die Lissajoscghe wellenfigur sich, wie abgebildet, 0 Grad nähert.

Anmerkung:

When L-K und R-K nicht auf demselben Punkt ihren Höchstwert erreichen, stellen Sie beide Kanäle auf den jeweiligen Höchstwert und gleichen dann aus.

2. Nehmen Sie denselben Einstellvorgang in der Wiedergabestellung vor.

Prüfung des Pegelunterschiedes bei Vorwärts- und Rückwärtsdrehung

3. Den Abschnitt für Verstärkungseinstellung (315Hz, 0dB) des Prüfbandes (QZZCFM) wiedergeben und sicherstellen, daß der Pegelunterschied bei Vorwärts- und Rückwärtsdrehung kleiner als 1dB ist.
4. Nach der Einstellung Schrauben-Sicherungsmittel an die Azimuth-Einstellschraube geben.

Bandgeschwindigkeits-einstellung (Deck 1/2)**Normale Geschwindigkeit**

1. Den Wahlschalter für Editier-Bandgeschwindigkeit auf "x1" stellen.
2. Den mittleren Teil des Prüfbandes (QZZCWAT) wiedergeben.
3. Deck 1 = VR902 und Deck 2=VR903 so einstellen, daß

Hohe Geschwindigkeit

4. Den Wahlschalter für Editier-Bandgeschwindigkeit auf "x2" stellen und den Prüfmoduspunkt und GND verbinden.
5. Den mittleren Teil des Prüfbandes (QZZCWAT) wiedergeben.
6. Deck 1 = VR901 so einstellen, daß der Ausgang dem Sollwert entspricht.

Einstellung der Wiedergabeverstärkungsregelung (Deck 1/2)

1. Spielen Sie auf dem Testband (QZZCFM) den Teil für die Einstellung der Verstärkungsregelung (315Hz, 0dB) ab.
2. Stellen Sie VR3 (L-K) [[VR4 (R-K)]] für Deck 1 uon VR5 (L-K) [[VR6 (R-K)]] für Deck 2 so ein, daß die Abgabe den Normwert erfüllt.

Wiedergabefrequenzaang (Deck 1/2)

1. Spielen Sie auf dem Testband (QZZCFM) den Teil für den Frequenzgang (315Hz, 12,5kHz~63Hz, -20dB) ab.
2. Achten Sie darauf, daß der Frequenzgang für beide Kanäle (L-K, R-K) in dem in Abb. 6 gezeigten Bereich liegt.

Löschstromeinstellung (Deck 2)

1. Die leere Metallband-Prüfkassette (QZZCRZ) einsetzen und das Gerät auf Aufnahme-/Pause schalten.

2. VR301 so einstellen, daß der Ausgang zwischen TP3 und GND dem Sollwert entspricht.

Gesamtfrequenzgang (Deck 2)

1. Legen Sie das normale Leertestband (QZZCRA) ein und stellen das Gerät auf Aufnahme-/Pause-Betrieb.

2. Geben Sie über einen Lautstärkeregler ein Bezugseingabesignal (1 kHz, -24 dB) ein.

3. Stellen Sie das Signal auf 20 dB und justieren die Frequenz von 50 Hz~10 kHz.

4. Nehmen Sie das Wobbelsignal auf.

5. Geben Sie das aufgenommene Signal wieder und achten darauf, daß dieses sich im Vergleich zur Bazugsfrequenz (1 kHz) in dem in Abb. 8 aufgezeichneten Bereich befindet.
6. Sollte das Signal nicht im Normbereich liegen, justieren Sie VR303 (L-K) und VR302 (R-K), so daß der Frequenzpegel mit der Norm übereinstimmt.

7. Wiederholen Sie die Schritte 2~6 und verwender das CrO₂ Band (QZZCRX) und das Metallband (QZZCRZ). Der Frequenzbereich wird auf 12.5 kHz (50 Hz~12.5 kHz) angehoben.

8. Achten Sie darauf, daß sich der Frequenzpegel in dem in Abb. 9 aufgezeigten Bereich befindet.

Einstellung der Gesamtverstärkungsregelung (Deck 2)

1. Legen Sie das normale Leertestband (QZZCRA) ein und stellen das Gerät auf Aufnahme-/Betrieb.

2. Legen Sie ein Bezugseingabesignal (1 kHz, -24 dB) an. Stellen Sie das Ausgangssignal auf einen Pegel von 0.4 V ein.

3. Nehmen Sie das Eingabesignal auf.
4. Geben Sie das in Schritt 3 oben aufgenommene Signal wieder und achten Sie darauf, daß das Ausgangssignal mit dem Normwert übereinstimmt.

5. Sollte der Wert nicht innerhalb der Norm liegen, justieren Sie VR7 (L-K) und VR8 (R-K).

6. Wiederholen Sie die Schritte 2~5 von oben so lange, bis das Ausgangssignal im Normbereich liegt.

FRANÇAIS

METHODES DES MEASURES ET REGLAGES

Appareils de mesure

- Voltmètre électronique

• Oscilloscope

• Compteur de fréquence numérique

• Oscillateur de fréquence audio
- A.T.T. (Atténuateur)

• Voltmètre à C.C.

• Résistance (600Ω)

Reglage Azimutal de la tete (Platine 1/2)

1. Faire jouer la portion du réglage de l'azimuth (8 kHz, -20 dB) de la bande d'essai (QZZCFM). Ajuster la vis de la mise au point azimuthale jusqu'à de que les sorties du canal de gauche et du canal de droite soient maximisées et que la forme d'onde de Lissajous, comme il est illustré, approche de 0 degré.

Nota:

- Si le canal de gauche et canal de droite ne sont pas maximisés au même point, régler le point où les niveaux de chaque canal sont maximisés et égaux.
2. Effectuer le même r&e 19 mglage sur le mode d'audition.

Vérification de la différence de niveau pour les deux sens de rotation

3. Introduire une bande métal vierge prévue pour les essais (QZZCPZ) et vérifier que la différence de niveau pour les deux sens de rotation est inférieure à 1 dB.
4. Après cela, mettre une goutte de vernis de blocage sur la vis de réglage de l'azimut.

Réglage de la vitesse de défilement Vitesse (Platine 1/2)

normal

1. Placer le sélecteur de vitesse d'édition sur la position "x1".
2. Lire la partie centrale de la bande d'essai (QZZCWAT).
3. Régler VR902 pour la platine 1 et VR901 pour la platine 2 de manière que la sortie ait la valeur standard.

Grande vitesse

4. Placer le sélecteur de vitesse d'édition sur la position "x2" et relier le point de test et la masse (GND).
5. Lire la partie centrale de la band d'essai (QZZCWAT).
6. Régler VR901 pour la platine 1 de manière que la sortie ait la valeur standard.

Reglage de L'amplification de Lecture (Platine 1/2)

1. Faire jouer la partie réglée de l'amplification (315 Hz, 0 dB) de la bande d'essai (QZZCFM).
2. Régler la platine 1: VR3 (canal de gauche) [[VR4 (canal de droite)]] et la platine 2: VR5 (canal de gauche) [[VR6 (canal de droite)]] de telle sorte que la sortie soit en deçà de la valeur standard.

Reponse en Frequence de la Lecture (Platine 1/2)

1. Faier jouer la partie de la réponse en fréquence (315 Hz, 12.5 kHz, -63 Hz, -20 dB) de la bande d'essai (QZZCFM).
2. S'assurer que la réponse en fréquence soit en deçà de la plage montrée dans la Fig. 6, à la fois pour le canal de gauche et le canal de droite.

FRANÇAIS

METHODES DES MEASURES ET REGLAGES

Appareils de mesure

- Voltmètre électronique
- Oscilloscope
- Compteur de fréquence numérique
- Oscillateur de fréquence audio

- A.T.T. (Atténuateur)
- Voltmètre à C.C.
- Résistance (600Ω)

Réglage Azimutal de la tête (Platine 1/2)

1. Faire jouer la portion du réglage de l'azimut (8kHz, -20dB) de la bande d'essai (QZZCFM). Ajuster la vis de la mise au point azimutale jusqu'à ce que les sorties du canal de gauche et du canal de droite soient maximisées et que la forme d'onde de Lissajous, comme il est illustré, approche de 0 degré.

Nota:

- Si le canal de gauche et canal de droite ne sont pas maximisés au même point, régler le point où les niveaux de chaque canal sont maximisés et égaux.
2. Effectuer le même réglage sur le mode d'audition.

Vérification de la différence de niveau pour les deux sens de rotation

3. Introduire une bande métal vierge prévue pour les essais (QZZCPZ) et vérifier que la différence de niveau pour les deux sens de rotation est inférieure à 1dB.
4. Après cela, mettre une goutte de vernis de blocage sur la vis de réglage de l'azimut.

Réglage de la vitesse de défilement Vitesse (Platine 1/2)

normal

1. Placer le sélecteur de vitesse d'édition sur la position "x1".
2. Lire la partie centrale de la bande d'essai (QZZCWAT).
3. Régler VR902 pour la platine 1 et VR901 pour la platine 2 de manière que la sortie ait la valeur standard.

Grande vitesse

4. Placer le sélecteur de vitesse d'édition sur la position "x2" et relier le point de test et la masse (GND).
5. Lire la partie centrale de la bande d'essai (QZZCWAT).
6. Régler VR901 pour la platine 1 de manière que la sortie ait la valeur standard.

Réglage de L'amplification de Lecture (Platine 1/2)

1. Faire jouer la partie réglée de l'amplification (315Hz, 0dB) de la bande d'essai (QZZCFM).
2. Régler la platine 1: VR3 (canal de gauche) [[VR4 (canal de droite)]] et la platine 2: VR5 (canal de gauche) [[VR6 (canal de droite)]] de telle sorte que la sortie soit en deçà de la valeur standard.

Réponse en Fréquence de la Lecture (Platine 1/2)

1. Faire jouer la partie de la réponse en fréquence (315Hz, 12.5kHz, -63Hz, -20dB) de la bande d'essai (QZZCFM).
2. S'assurer que la réponse en fréquence soit en deçà de la plage montrée dans la Fig. 6, à la fois pour le canal de gauche et le canal de droite.

Réglage du courant d'effacement (Platine 2)

1. Introduire une bande métal vierge prévue pour les essais (QZZCRZ) et régler l'appareil en mode de pause d'enregistrement.
2. Régler VR301 de manière que la sortie entre TP3 et GND ait la valeur standard.

Réponse en Fréquence Totale (Platine 2)

1. Introduire la bande d'essai vierge normale (QZZCRA) et régler l'appareil sur le mode d'intermission d'un disque.
2. Appliquer un signal d'entrée de référence (1kHz, -24dB) par l'intermédiaire d'un atténuateur.
3. Diminuer le signal de 20dB et régler la fréquence de 50Hz~10kHz.
4. Enregistrer le balayage de fréquence.
5. Faire jouer le signal enregistré et s'assurer qu'il soit en deçà de la plage montrée à la Fig. 8 en comparaison à la fréquence de référence (1kHz).
6. S'il n'est pas en deçà de la plage standard, régler VR303 (canal de gauche) et VR302 (canal de droite) de telle sorte que le niveau de fréquence soit en deçà de la plage standard.
7. Répéter les étapes 2~6 ci-dessus en utilisant la bande CrO₂ (QZZCRX) et la bande métallisée (QZZCRX) en augmentant la plage de fréquence à 12.5kHz (50Hz~12.5kHz).
8. S'assurer que le niveau soit en deçà de la plage montrée à la Fig. 9.

Réglage de L'amplification Totale (Platine 2)

1. Introduire la bande d'essai vierge normale (QZZCRA) et régler l'appareil sur le mode d'intermission d'un disque.
2. Appliquer un signal d'entrée de référence (1kHz, -24dB). Diminuer la sortie de telle sorte que son niveau devienne de 0.4V.
3. Enregistrer ce signal d'entrée.
4. Faire jouer le signal enregistré à l'étape 3 ci-dessus, et s'assurer que la sortie en deçà de la valeur standard.
5. Si elle n'est pas en deçà de la valeur standard, régler VR7 (canal de gauche) et VR8 (canal de droite).
6. Répéter les étapes 2~5 ci-dessus jusqu'à ce que la sortie soit en deçà de la valeur standard.

ESPAÑOL

METODOS DE AJUSTE Y MEDIDA

Instrumento de medición

- EVM (Voltímetro electrónico)
 - Osciloscopio
 - Frecuencímetro digital
 - Oscilador AF
- ATT (Atenuador)
 - Voltímetro CC
 - Resistor (600Ω)

Ajuste Azimutal de Cabeza (Platina 1/2)

- Reproducir la porción de ajuste azimutal (8kHz, -20dB) de la cinta de prueba (QZZCFM). Variar el tornillo de ajuste azimutal hasta que las salidas del CH-I y CH-D se maximicen y forma de onda de lissajous, como ilustrado, se acerque a grado 0.

Nota:

Si CH-I y CH-D no son maximizados en el mismo punto, ajustar al punto donde los niveles de cada canal sean maximizados e igualados.

- Efectuar el mismo ajuste en la modalidad de reproducción.

Comprobación de la diferencia de nivel de giro hacia adelante y hacia atrás

- Reproduzca la parte del ajuste de ganancia (315Hz, 0dB) de la cinta de prueba (QZZCFM) y luego asegúrese de que la diferencia de nivel de giro hacia adelante y hacia atrás sea menor que 1dB.
- Después del ajuste, aplique pintura de fijación al tornillo de ajuste del azimut.

Ajuste de la Velocidad de la Cinta (Platina 1/2)

Velocidad normal

- Lleve a "x1" el selector de la velocidad de la cinta de edición.
- Reproduzca la sección central de la cinta de prueba (QZZCWAT).
- Ajuste la platina 1 = VR902 y la platina 2 = VR903 de modo que la salida quede comprendida dentro de los valores estándares.

Alta velocidad

- Lleve a "x2" el selector de la velocidad de la cinta de edición y conecte GND y el punto de la modalidad de prueba.
- Reproduzca la sección central de la cinta de prueba (QZZCWAT).
- Ajuste la platina 1 = VR901 de modo que la salida quede comprendida dentro de los valores estándares.

Ajuste de Ganancia de Reproduccion (Platina 1/2)

- Reproducir la porción ajustada de ganancia (315Hz, 0dB) de la cinta de prueba (QZZCFM).
- Ajustar la Platina 1: VR3 (CH-I) [[VR4 (CH-D)]] y la Platina 2: VR5 (CH-I) [[VR6 (CH-D)]] de manera que la salida esté dentro del valor estándar.

Respuesta de Frecuencia de Reproduccion (Platina 1/2)

- Reproducir la parte de respuesta de frecuencia de reproducción (315Hz, 12.5kHz~63Hz, -20dB) de la cinta de prueba (QZZCFM).
- Asegurarse de que la respuesta de frecuencia esté dentro de la gama mostrada en la Fig. 6 para ambos CH-I y CH-D.

Ajuste de la Corriente de Borrado (Platina 2)

- Inserte la cinta de prueba metálica en blanco (QZZCRZ) y ponga el aparato en la modalidad de pausa de grabación.
- Regule VR301 de modo que la salida entre TP3 y GND esté dentro de los valores estándares.

Respuesta de Frecuencia Total (Platina 2)

- Poner una cinta virgen normal (QZZCRA) y poner la unidad en la modalidad de Pausa de Grabación.
- Aplicar la señal de entrada de referencia (1kHz, -24dB) a través de un atenuador.
- Atenuar la señal por 20dB y ajustar la frecuencia de 50Hz~10kHz.
- Grabar el barrido de frecuencia.
- Reproducir la señal grabada y asegurarse de que esté dentro de la gama mostrada en la Fig. 8 en comparación con la frecuencia de referencia (1kHz).
- Si no está dentro de la gama de frecuencia, ajustar VR303 (CH-I) y VR302 (CH-D) de manera que el nivel de frecuencia esté dentro de la gama estándar.
- Repetir los pasos 2~6 de arriba utilizando la cinta CrO₂ (QZZCRX) y la cinta metálica (QZZCRZ) incrementando la gama de frecuencia a 12.5kHz (50Hz~12.5kHz).
- Asegurarse de que el nivel esté dentro de la gama mostrada en la Fig. 9.

Ajuste de Ganancia Total (Platina 2)

- Insertar la cinta de prueba en blanco normal (QZZCRA) y poner la unidad en modalidad de pausa de Grabación.
- Aplicar la señal de entrada de referencia (1kHz, -24dB). Atenuar la salida de manera que su nivel se haga 0.4V.
- Grabar la señal de entrada.
- Reproducir la señal grabada en el paso 3 de arriba y asegurarse de que la salida esté dentro del valor estándar.
- Si no está dentro del valor estándar, ajustar VR7 (CH-I) y VR8 (CH-D).
- Repetir el paso 2~5 de arriba hasta que la salida esté dentro del valor estándar.